CUMBERLAND COUNTY COUNCIL.

EDUCATION COMMITTEE.

REPORT

OF THE

SCHOOL MEDICAL OFFICER

F. H. MORISON, M.D., D.P.H., &c.,

ON THE

Medical Inspection of School Children.

FOR THE YEAR ENDED

DECEMBER 31st, 1928.

LIVERPOOL:
MEEK, THOMAS & CO. LTD., PRINTING CONTRACTORS.

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To the Chairman and Members of the Education Committee.

MR. CHAIRMAN, LADIES AND GENTLEMEN,

I have pleasure in presenting this my Twenty-first Annual Report on the Medical Inspection and Treatment of School Children, namely, that for the year ended 31st December, 1928.

We are singularly fortunate in retaining for many years the same efficient and conscientious medical and nursing staffs to carry on the routine work, because with experience has come greater dexterity in selecting children who require treatment, together with greater skill in treating the various conditions requiring it. This has enabled some members of the staff to devote more time to making special enquiries (*q.v.*) as well as to perfecting those branches of treatment which from difficulties of administration required special consideration, such as the after-care of Ear, Nose and Throat cases.

In this connection I would like to acknowledge my indebtedness to Mr. E. Craig Dunlop, F.R.C.S., of Carlisle, for all the help and advice he has given us.

In view of the recent enquiries which have been made into malnutrition of school children, especially in the industrial areas in the West of Cumberland, I am greatly indebted to Dr. Towers for his exceedingly valuable report (see Appendix B).

This report is the more valuable because it was commenced by Dr. Towers long before any official enquiry into malnutrition was instituted, and, moreover, was an extra to his ordinary duties, and undertaken on his own initiative.

It will be noticed that Dr. Towers compares the weights of school children in his area in 1928, with the weight of the average Cumberland school child in 1913.

Although at most ages the school children of West Cumberland at the present time are heavier than the average Cumberland children in 1913, the chief discrepancy in favour of West Cumberland is in the age group over 14, being 4 lbs. in favour of boys and 8 lbs. in favour of girls, although the difference is marked throughout the ages over 12.

It must also be remembered that in 1913 the weight of the average Cumberland school child was equal to or better than the average child in the *County* areas of all England at that time.

After twenty years of strenuous work to benefit the health of school children, can we show any results?

Twenty years ago 45 per cent. of the children examined in school were found to have verminous heads, now only 0.9 per cent. are so found.

In 1909 no treatment was provided by the Education Authority and very few children recommended for treatment received it, whilst in 1928, 17,739 attendances were made at the school clinics for treatment, and approximately 80 per cent. of those recommended for treatment of any ailment actually received it.

Schemes of treatment by specialists have for some years been in operation for such conditions as Crippling, Eye defects, Ear, Nose and Throat conditions requiring special treatment or operation.

The result of all this treatment and the teaching arising out of it is a markedly beneficial effect on the physical condition of the children; how else can we explain the fact that in 1909, out of a total of 2,993 children inspected 36.6 per cent. required treatment, whilst in 1928, out of a total of 7,939 children inspected only 16 per cent. required treatment?

It is true that the routine of searching for defects and remedying them as early as possible is still one of the chief duties of a School Medical Officer, but the search for defects and even their cure is not and never has been the ideal at which we aim.

Twenty years ago we were looking for disease to cure it, we have now learned to look for health to preserve it.

By remedying slight defects, more serious illness is being prevented, but this is only one aspect of preventive medicine.

True prevention can only be firmly established by close co-operation between the people and the medical profession.

The public must be taught what can be done, and the medical profession must find out by research the causes which lead to slight departures from health.

Up to the present research has done a great deal, but there yet remains much to be done; nevertheless, certain facts are known, which, if acted upon, would go a long way to preserve health. We know, for instance, that by taking care of the health of expectant mothers, the coming baby is more likely to be born healthy and strong than if the haphazard methods of trusting to luck and doing nothing is still carried on.

We know, too, that by the early treatment of a case of Infantile Paralysis, most of the dreadful crippling conditions which have demanded treatment in the past can be prevented.

We also know that by care of the expectant mother, and careful feeding of infants and children, dental decay can be prevented, and we know, too, that the intense suffering and disablement arising from tuberculosis of the bones and joints can be prevented by providing a clean, germ (tubercle) free milk.

Before closing this letter may I take this opportunity of saying how very much I appreciate the invariable kindness and consideration I have always received from all the members of your various Committees, and I would like also to pay a tribute to every member of my staff, medical, nursing and clerical, for their loyalty and devotion to duty, not only in carrying out their routine duties, but in giving much of their leisure time in order to elucidate many difficult problems arising therefrom.

I have the honour to be,

Ladies and Gentlemen,

Yours obediently,

F. H. MORISON,

School Medical Officer.

I.—STAFF.

No change has occurred in the personnel of the staff.

In no case is the full time of any members, either medical or nursing, of the staff given to the School Medical Service. Their time is apportioned as may be necessary between School medical work, tuberculosis, maternity and child welfare and general public health.

There are obvious and distinct advantages in arranging the work on such a basis, not the least of which are that there is no overlapping of duties, and the cost of travelling, which, in such a County as Cumberland, must necessarily be high, is reduced to a minimum.

II.—CO-ORDINATION.

In order that co-ordination may be full and complete, the County is divided into six Medical Areas, with a Medical Officer in charge of each. He is responsible to the School Medical Officer, who is also the County Medical Officer, for the whole of the work in his area, whether it comes under one or other of the following heads:—

(1) School Medical Work.
(2) Maternity and Child Welfare.
(3) Tuberculosis.
(4) General Public Health.

In this way the completest co-ordination is secured, and any case is easily transferred from one branch to another, without any fear of being lost sight of.

As I have on previous occasions pointed out, the closest possible co-ordination ought to exist between the School Medical Service and the work of Maternity and Child Welfare, because unless there is a thorough and efficient infant and child welfare scheme in operation, an unnecessary burden is thrown on the School Medical Service in the way of treating disease, disease, moreover, which could and should have been prevented had it been possible to examine and treat all children in the age period 1 to 5 years prior to their admission to school.

In those areas where there is a Maternity and Child Welfare Clinic, viz., Penrith, Wigton, Maryport, Arlecdon and Frizington, Cleator Moor, Egremont and Millom, there is close co-operation between the two branches of work. A similar type of record card is used for each clinic, and these are transferred from the Child Welfare Clinic to the school section, when the child starts attending school. In this way it is possible to have many defects attended to early, defects which would, as a general rule, remain untreated till the child was present at its first medical inspection at school.

Later in this Report it will be seen that of the number of children examined for the first time on their admission to school, 19 per cent. require some form of treatment for a definite physical defect. In other words, nearly one in every five begins its school life and its education handicapped by ill-health more or less marked. It must also be remembered that at least double this number, without showing any definite defect, show some departure from normal, sufficient to warrant their being kept under careful observation. We must recognise how serious the problem is.

III.—SCHOOL HYGIENE.

The present is not an opportune time, for financial reasons, to consider in detail the defects, sanitary and otherwise, of the schools. The condition of many of the schools, as regards sanitary conveniences, heating, lighting and ventilation, etc., are such, however, that as soon as financial circumstances will allow, the whole question will require serious and careful consideration.

In the meantime only some of the more serious defects are notified to the Director of Education, who readily helps in every possible way.

Dr. Towers reporting on the schools in his area says:—

"School Premises: There are several of these that are in a very poor condition, ventilation and lighting poor, etc., but, as in most instances, these defects are not capable of improvement, except at great cost, a detailed description is not called for. In a great many cases, however, a very great improvement is possible with very little expenditure. I have already submitted a special report on what is, in effect, the complete absence of cloak-room accommodation in one of the

infant schools at Cleator Moor. This neeessitated overcoats being stored *in the class-rooms* in heaps on the floor. It is not necessary to emphasise how intolerable sueh a state of affairs is, or how enormously the risk of spread of infection is, from the eommon cold upwards. In justiee it should be stated that injury to the ' cloak-room ' proper, caused by a falling ehimney pot, was responsible for this state of things, but even at its best, this partieular eloak-room was grossly inadequate and ineffieient, being far too much exposed to damp and the outside air, the elothes being mueh too close to the wash basins, with pegs barely suffieient for half the children in sehool, and abnormally small. Another direction in which a very great deal of improvement is possible is in the matter of sweeping and dusting, and in this no extra expense whatever is involved, it being a serviee already paid for, but whieh is not being effieiently earried out. In one partieular group of sehools I have frequently heard eomplaints on the part of teachers, espeeially in the ease of window ledges, 6-7 feet from the ground, where dust is generally thiek, being out of sight and out of mind. In a very great number of sehools the inside walls are in a very dilapidated eondition, large flakes of previous coats of paint or eolour-wash coming off, leaving dirty bare patches."

IV.—MEDICAL INSPECTION.

For administrative purposes the County is divided into six areas, each in charge of one Medieal Offieer.

No changes have taken plaee in administration during the year.

Age Groups of Children Inspected.

The ehildren inspeeted fall into the same groups as in previous years, viz.: (a) Code groups, ineluding Entrants, Intermediate (8 years of age) and Leavers (12 years of age and over); (b) " Speeials," *i.e.*, ehildren of any age not being eode or routine eases; and (e) Re-examinations, *i.e.*, ehildren who for any reason it is eonsidered advisable to examine more than once in the year.

The number eoming under each group will be found in Table I. at the end of this Report.

The Board's sehedule has been adhered to, with the slight exception noted in the Report for 1921.

V.—FINDINGS OF MEDICAL INSPECTION.

In Table II. will be found, set out in detail, the number and class of defects noted. In considering this, however, it must be remembered that in a great many instances more than one defect is found in one child, and whilst each defect is counted in the total number found (see Table II.A.), the number only of children examined is given (Table II.B.) irrespective of the number of defects from which any child may be suffering.

The number of children in the Code groups, 7,937, found on medical inspection to require treatment (apart from uncleanliness and dental defects) was 1,314, or 16 per cent. of all those inspected.

Of course, the number of " Specials " requiring treatment is much larger than this, because they are selected for examination, either by the Head Teacher, the Attendance Officer, or the Medical Inspector, on account of their unhealthy appearance, suggesting that they are suffering from some defect.

In the Code groups it will be noted that while 19 per cent. of Entrants required treatment, 18 per cent. of Intermediates and 12 per cent. of Leavers required treatment.

These percentages are lower by 1, 4 and 5 per cent. respectively, than the figures in the previous year.

The necessity for intimate co-ordination between a Maternity and Child Welfare Scheme and the School Medical Service will become apparent when it is realised that the necessity for treatment is greater amongst the Entrants than either of the other Code groups.

My view of an efficient Maternity and Child Welfare Scheme is one which not only pays attention to the child during its infancy, but also makes adequate provision for the periodical and thorough medical examination of all children, at least once every year, but better still, every six months; not so much with the view of detecting disease, but of maintaining health, and treating the earliest manifestations of the slightest departure from health.

If this were done efficiently, I have no doubt that the expenditure involved would be amply repaid by the better health of Entrants to the schools, as well as by a direct saving of money on the treatment of school children who should never have been allowed to become " defectives."

It is satisfactory to note that in his area Dr. Towers reports :—" The general physical condition of the children is surprisingly good under the present adverse circumstances, and I am glad to find that this is specially the case amongst the younger ones, *i.e.*, the entrant group. This is a very favourable sign for the future. I think this is, to a great extent, to be attributed to the activities of the M. and C.W. Centres, and to the treatment accorded to children of pre-school age. One is now meeting an increasingly large number of ' entrants ' with whose physical condition and past history one is very familiar, and an appreciable number of these have had defects, which, however, have been dealt with and corrected before they came on a school register. This must very shortly make a difference to the number of ' entrants ' referred for treatment, besides conferring the very great advantage of having defects remedied at a much earlier age."

Review of the facts disclosed by Medical Inspection.

(*a*) *Uncleanliness.*

During the year 192 cases of uncleanliness were reported by the Medical Staff, equivalent to 0.9 per cent. of the total number of children examined. It is gratifying to be able to record that the improvement noted in former years is not only maintained, but even improved. It is now less than 1 per cent. of all children examined.

(*b*) *Minor Ailments.*

The total number of minor defects noted is forty-four less than of that noted the previous year, viz. :—2,249, against 2,293.

(*c*) *Tonsils and Adenoids.*

See Appendix C.—" Treatment of Ear, Nose and Throat cases," by Dr. Kenneth Fraser.

(D) Tuberculosis.

(*a*) *Pulmonary.*—Sixty-eight definite cases were found, fifty-seven requiring treatment (three Routines and fifty-four Specials), and eleven to be kept under observation (three

Routines and eight Specials); whilst seventy-seven suspected cases (twenty-two Routines and fifty-five Specials) were noted. Sixty-five were referred for treatment, and twelve to be kept under observation.

A large percentage, in fact practically all, of these cases, both definite and suspected, were " contacts " of cases of tuberculosis already known.

During the year 586 children were examined specially with a view to discover whether they had Tuberculosis or not, because they were " contacts " of known cases.

Fifteen, or 2.5 per cent., were found to be suffering from Pulmonary Tuberculosis, and thirty-seven, or 6 per cent., were suspicious, and will be examined again from time to time.

(*b*) *Non-Pulmonary.*—Sixty-one cases of Tuberculosis affecting glands, bones and joints, spine and other parts of the body were also noted. This is a decrease of thirteen on the previous year. More attention has been given to finding the cases, because further and better facilities are now provided for treatment.

(E) Skin Diseases.

Of these there were 1,204 referred for treatment; whilst forty were to be kept under observation.

The cases referred for treatment were:—

Ringworm of the Head	63
,, ,, Body	50
Scabies	48
Impetigo	559
Small Septic Sores, &c.	484

These conditions were slightly more prevalent than in previous years.

(F) External Eye Diseases.

Of these there were 492 cases, 316 requiring treatment, and 176 to be kept under observation.

(G) Vision.

1,833 cases of defective vision were noted, 702 in the Routines, 293 were referred for treatment, whilst 409 are to be kept under observation. Among the Specials there were 1,131, 410 requiring treatment, and 721 to be kept under observation.

The very useful notes on Defective Vision kindly given me by Dr. Ross, have been printed as a leaflet, and a copy is sent to the parents of every child discovered with defective eyesight.

(H) Ear Disease and Hearing.

Of ear diseases there were 204 referred for treatment; whilst sixty were to be kept under observation.

Of defective hearing sixty-two cases were referred for treatment, and forty-one for observation.

(I) Dental Defects.

513 were noted at the Medical Inspection as requiring treatment.

It must, of course, be understood that this number represents only the very worst cases, with abscesses and serious septic conditions of the month, ordinary cases of dental caries are not included in the figures relating to medical inspection.

VI.—INFECTIOUS DISEASES.

The procedure for dealing with infectious diseases in schools is that agreed upon in 1909. It is found satisfactory in working, and has not been varied.

With the exception of Influenza and Whooping Cough, no infectious disease was unduly prevalent during the year.

Eighty-two schools were closed for the following reasons:

Influenza	...	55	Scarlet Fever	...	1
Measles	...	4	Whooping Cough		13
Chickenpox	...	2	Diphtheria	...	1
Mumps	...	5	Conjunctivitis	...	1

VII.—FOLLOWING-UP.

I am satisfied that the methods now adopted at least give the opportunity for every child requiring treatment to obtain it.

The vast majority of parents gladly avail themselves of the opportunity, many require a good deal of explanation and persuasion, and a small minority will only have treatment carried out when practically compelled to do so. The National Society for the Prevention of Cruelty to Children has again this year been most helpful in persuading obstructive parents of the necessity for treatment in certain cases, but they are only asked to intervene when danger to health is manifesting itself.

The extent and scope of this work is shown in the following table, which shows the conditions for which the homes were visited as well as the number of visits paid:—

Conditions.	*No. of Cases.*	*No. of Visits paid.*
Malnutrition	13 ...	99
Uncleanliness	118 ...	216
Skin Diseases	112 ...	283
Eye Conditions..	250 ...	349
Ear Conditions...	185 ...	392
Nose and Throat	120 ...	366
Heart and Circulation... ...	109 ...	298
Lungs (Non-Tubercular) ...	87 ...	252
Lungs (Tubercular)	— ...	—
Pretubercular	22 ...	72
Other Tuberculous Conditions	4 ...	15
Deformities	10 ...	170
Glands	12 ...	43
General Cases	88 ...	233
	1130	2788

In addition to these, sixty-seven visits were paid by District Nurses to thirty cases requiring dental treatment.

VIII.—MEDICAL TREATMENT.

The arrangements for the various forms of treatment have been dealt with fully in previous reports, and are summarised in that for the year 1923, pp. 16-18.

Some indication of the amount and scope of the work at the School Clinics will be got from the following tables:—

Clinic.	*New Cases.*	*No. of Attendances all Cases.*
Cleator Moor ...	484	2780
Cockermouth ...	474	3105
Egremont	334	1013
Maryport	666	3787
Millom	474	3830
Penrith	356	1679
Wigton	264	1545
	3052	17739

The number of attendances at all the Clinics is considerably larger than in any previous year. Of the Clinics in his area, Dr. Towers says:—"Both Clinics in this area have continued to work under very great pressure, there having been close on 3,000 attendances at Cleator Moor and nearly 4,000 at Millom. So great has the difficulty become in dealing with these numbers that some re-organisation has had to be put into operation in the way cases are dealt with. A very large number of cases continue to be treated with Iodine in various forms and, as in previous years, with varying degrees of success. It has become a routine method of treatment in many conditions, and it is neither possible nor desirable to continue quoting individual cases. One exception I should like to point out is the treatment of Alopœcia (bald patches) with Collosol Iodine Oil. In my experience this gives most persistently good results, and, moreover, is the only line of treatment which appears to give any results at all. Especially is this the case in the bald patches resulting from Ringworm. But that results are not confined to this class of case or to children is illustrated by the case of a lady teacher, who was very seriously threatened with baldness. She informed me that she had spent considerable sums on a variety of things, none having done any good. I advised her to try the effect of Collosol Iodine Oil. I did not see her again for nearly a year, when she came a considerable distance to let me see the result. There can be no question as to the remarkable effect it had had. Not only had the hair ceased falling out, but all traces of incipient baldness had vanished. This result was achieved by the use of two applications weekly, a little of the oil being rubbed into the scalp."

Conditions for which Child attended.	*New Cases.*	*No. of Attendances all Cases.*
Malnutrition	30 ...	209
Uncleanliness	40 ...	381
Skin Diseases	825 ...	4486
Ear Diseases	126 ...	843
Eye Diseases	296 ...	1640
Nose and Throat	140 ...	463
Enlarged Glands(Non-Tubercular)	36 ...	81
Heart and Circulation	67 ...	337
Lungs (Non-Tubercular) ...	139 ...	802
Lungs (Tubercular or Suspected)	67 ...	531
Tuberculosis (Non-Pulmonary) ..	21 ...	218
Nervous System	43 ...	174
Deformities	37 ...	195
Other Defects and Diseases	...1092 ...	7105
Goitre	34 ...	168
Defective Speech	— ...	—
Dental	59 ...	106
	3052	17739

There were 155 fewer new cases. but 615 more attendances at the Clinics than in the previous year.

The following is a short summary of all the treatment carried out during the year:—

(*a*) *Minor Ailments.*

Referred for treatment.	Treated.
2591	2189

(*b*) *Tonsils and Adenoids.*

Referred for treatment.	Treated.
500	353

(*c*) *Tuberculosis, Pulmonary.*

Referred for treatment.		Treated.
Definite	57	38
Suspected	65	52

Non-Pulmonary.

34	26

On the 1st January, 1928, nine children were under treatment in the Sanatorium for Tuberculosis, as under:—

	Boys.	*Girls.*
Pulmonary	4 ...	5
Non-Pulmonary ...	— ...	—

Twenty-five children (eleven boys and fourteen girls) were admitted during the year. Twenty-three (twelve boys and eleven girls) were discharged during the year, and there were at the end of the year eleven (three boys and eight girls) still in the Sanatorium. On discharge sixteen were quiescent, five were "very much improved." In two there was "no material improvement."

During the year the Ministry of Health gave approval for the use of four beds for boys at St. Fechan's Sanatorium, Ecclefechan.

(*d*) *Skin Diseases.*

Referred for treatment.	Treated.
1204	858

(*e*) *External Eye Diseases.*

Referred for treatment.	Treated.
316	262

(*f*) *Vision and Squint.*

Referred for treatment.	Treated.
758	624

(*g*) *Ear Disease and Hearing.*

Referred for treatment.	Treated.
266	198

Included in groups (*b*) and (*g*) ninety-eight cases were referred to the Aural Specialist for his opinion:—Forty-six were operated upon by him; thirty operations were performed in local hospitals; nine cases were operated on privately, and thirteen cases required after-care (nasal oil, etc.) only.

(*h*) *Dental Defects.*

The report of the Dental Officer will be found in Appendix C.

The Dental Statistics are given in Table IV., Group IV.

During the year consideration has been given to the appointment of a second Dental Officer. As a sequel the following Joint Report of the School Medical Officer and the Dental Officer was presented to the appropriate Committee, and as a result a second Dental Officer is to be appointed at as early a date as possible (see Dental Officer's Report and Appendix D.)

Crippling Defects and Orthopædics.

The total number of cripples, who had received treatment under the Cripple Scheme up to the end of 1928, was 1,263.

The figures for the year are as follows:—

Table A.

New Cases during 1928	166
Number on Register, 1/1/28	404
Number Removed from Register (owing to Cured, Left County, Dead, or Cancelled)...	179
Number on After-care Register...	391
Attendances at After-care Clinics	787
Seen by Consulting Surgeon (not included in above)	90
Appliances Provided and Renewed	118
Plasters provided at After-care Clinics	16
Surgical Clogs and Boots supplied	48
Attendances at Intermediate Clinics	502
Number of Visits to Homes for After-care work ...	530
Number of Plasters put up in the Homes	56
Cases in Hospital, 1/1/28, and Admissions during 1928:—	
Windermere	66
Oswestry	12
Silloth Convalescent Home	1
Discharges from Hospital:—	
Windermere	47
Oswestry	6
Silloth Convalescent Home	1
Awaiting Admission to Hospital, 31/12/28	21
X-rayed during 1928	55
Awaiting X-ray	13

The work of the Cripple Scheme has gone on smoothly during 1928. The figures are more or less parallel with those for 1927, under the same headings, which are given above.

The treatment of tubercular cases at home on frames, where the clinical condition of the case and the home conditions are suitable, has been continued and expanded during the year.

The results are very satisfactory, and this method of treatment represents a very large financial saving in the cost of sending such cases to hospital. These cases are brought at intervals down to the Cripple Clinics on their frames to be seen by the Specialists from Windermere, either through the good offices of the St. John's Ambulance Brigade, Whitehaven Division, or that of private owners of cars, who continue to help us with our cripple work.

We continue to be greatly indebted to the Cumberland Girl Guides Association for their interest in our cripples, especially in connection with their transport and in connection with their post-guide training scheme, by means of which, girls incapacitated, by means of their crippling, from leading an ordinary life are kept in touch with the Girl Guide Movement by means of correspondence and visits from Officers of the Girl Guide Movement in the County.

We are particularly indebted to Miss Mounsey-Heysham, of Gate House, Naworth, Brampton, and Miss Josephine and Miss Norah Chance, of Broadfield, Carlisle, for their help in this way.

The present condition of the Cripple Scheme is indicated in the following tabular statement:—

Table B.

Poliomyelitis	71
Surgical Tuberculosis	61
Rickets	51
Congenital Defects	34
Birth Palsies	13
Injuries	12
Osteomyelitis	11
Torticollis	7
Spinal Curvature (other than T.B.)	28
Spastic Paralysis	17
Flat Foot	16
Pseudo Coxalgia...	14
Other Conditions	36
Talipes	20
Other Forms of Paralysis	10

The chief difficulty which came to the front in 1927 seems to have been more or less overcome in 1928, as fourteen more cases were admitted to hospital than in the previous year.

The greatest problem at the present in connection with the scheme is the increasing numbers of adult surgical tuberculosis cases that are being notified. These cases it is almost impossible to nurse at home on frames (like children) for various reasons, and this is going to add considerably to the cost of hospital treatment, and the amount allocated to this purpose is very limited.

Of course, where possible, these cases will be sent into hospital for operation, and then return home for after-care treatment, either in plaster, or in some other appliance.

One of the most pleasing features of this year's work is the number of cases who have been discharged from the remedial clinics (as cured or very much improved). This is in part due to the growing and intelligent interest taken by the mothers in the remedial treatment of their children, and the help they have given by conscientiously seeing that their children do each day the special groups of exercises given to them for their deformities.

The County Council have this year sanctioned the training of two cripples at the Cripples' Training College, Shropshire Orthopædic Hospital, Oswestry, and Whitehaven Board of Guardians one. The problem which arises in training cripples is their economic position after training (that is, whether there is likely to be an opening for them in their native town).

The cripples sent for training are very carefully selected. This involves a good deal of work. It entails a survey of:—

(1) Their physical fitness for the trade they may wish to take up.

(2) As to their mental capacity.

(3) The chances of their getting work in their own areas, after training.

1.—*Physical Fitness.*

Before any steps are taken, those cripples likely to be a credit after training are overhauled by Dr. K. Fraser, and he decides for which trade the boy (or girl) is suitable, and assists and guides the candidate to choose from the trades open to him.

2.—*Mental Capabilities.*

His school reports and behaviour are enquired into.

3.—*Scope for Employment.*

While the above two clauses are being looked into the After-care Sister makes enquiries in the area in which he lives, as to whether there is a chance of work for him in his own town or village, or in an area near.

Of the three boys already at the Training Centre: one has been entered as a clerk, with every prospect of getting work when through; one is a shoemaker, also with hopes of work on leaving; one entered as a shoemaker, but was found better fitted for surgical boot making, and has been transferred to that department.

There are several other severely handicapped cripples waiting for training, and owing to the lack of funds they must wait for two or three years until a vacancy occurs, owing to one of the above cripples having completed his training.

The Post Guides (crippled children unable through their deformity to join the ordinary Guide Movement)—see Medical Officer of Health's Report, 1926—under the leadership of Miss Mounsey-Heysham, Miss Chance, and Miss Walker, continue to grow in number. There are now two companies, and it is very encouraging to know that some of these children are earning a little money by their work. This is due to the above-named officers, who keep them up to scratch and dispose of their work for them, but the greatest benefit is the fact that they feel more in touch with other children, and, therefore, less crippled.

Subscriptions to the After-care of Cripples' Fund continue to come in satisfactorily, and during the year £250 of the money on deposit receipt was lifted from the bank and invested in a County Council Bond for that amount.

Also the sum of £1 9s. 2d. has been gathered together by St. Bee's Girl Guides, for the Adult Cripple Fund, by the sale of silver paper.

For many years now we have been under a great obligation to the Railway Officials and Staff at many Stations and on the trains for their great help to our Nurses in the transport of cripples to and from Oswestry and Windermere.

Our Nurses have now asked that this school be publicly acknowledged, and I very gladly take this opportunity of publicly thanking the Officials and Staff for their help, without which, transport of our cripples would become almost impracticable.

Many cripples travel to and from Hospital on frames, or in a condition in which they are unable to walk, either on account of their disability or on account of plaster.

While all have helped, the Officials and Staff at the following Stations have been chiefly concerned, because it is at these Stations at which changes between trains have, as a general rule, to take place:—

In Cumberland.

Carlisle, Penrith, Whitehaven.

Outside Cumberland.

Oxenholme, Crewe, Chester, Gobowen, Carnforth.

IX.—OPEN-AIR EDUCATION.

Beyond the fact that a few classes are held in the playgrounds in fine weather, there is no special accommodation for Open-air Education.

The provision of an Open-air Residential School has been prominently before the School Management Committee, following the very generous offer by the Executors of the late Wilfrid Irwin, Esq., of Derwent Lodge, Cockermouth, to the County Council.

The provision of such a school is now receiving the consideration of a Sub-Committee, and I hope the outcome of their deliberations will be the provision of an open-air school here, or elsewhere.

X.—PHYSICAL TRAINING.

The reports of Miss Fraser and Mr. Gray, the Chief Organisers, will be found in Appendices D. and E.

XI.—PROVISION OF MEALS.

It was not considered necessary by the Education Authority to provide any meals for school children during the year.

XII.—CO-OPERATION OF PARENTS.

Very few objections are now raised to the Medical Inspection of School Children; indeed the ever increasing number of parents who attend the inspections goes to show that the work is gradually becoming more popular, and that the obvious advantages to be obtained from it are being gradually realised.

There is, however, a strange reluctance on the part of some parents to obtain treatment for their children.

It may be because in some areas of the County adequate treatment is difficult to obtain, and that the difficulties to be overcome do not appear to the parent to warrant the expenditure of time and energy in obtaining treatment for a minor ailment, which in the parent's eyes is doing the child no harm.

If, however, Medical Inspection is to take the place it ought to take, and to bear fruit commensurate with the amount of money spent on it, a broad view must be taken and parents must be taught that the main object of Medical Inspection is the preservation of health, rather than the treatment and cure of disease.

Minor ailments—and no ailment is too trivial to demand immediate treatment—must be considered, not only as they affect the child in the present, but also as they may affect the child's health in the future. It is this aspect of treatment that is not sufficiently recognised, but the ever increasing attendance at the existing School Clinics is an indication of the fact that parents would be willing and, indeed, anxious to have their children treated if adequate facilities were provided within a reasonable distance.

XIII.—CO-OPERATION OF TEACHERS.

All possible help, not only at the Medical Inspection, but also in persuading parents to have treatment for their children, is given, and freely given, by practically all the teachers. There are, however, one or two who are not only indifferent, but markedly hostile, and do not hesitate to put every obstacle in the way.

The help given by teachers is much appreciated by the whole of the Medical Staff, and I gladly take this opportunity of acknowledging our indebtedness to them.

XIV.—CO-OPERATION OF SCHOOL ATTENDANCE OFFICERS.

Close co-operation exists between the Medical and Attendance Departments, the one being mutually helpful to the other. Most of the Attendance Officers attend at the Medical Inspections, and often bring up habitual absentees for examination; similar cases are taken to the School Clinics by the Attendance Officers.

XV.—CO-OPERATION OF VOLUNTARY BODIES.

In addition to those mentioned in connection with the Cripple Scheme, much valuable assistance is given in following up, and in securing treatment by the Inspectors N.S.P.C.C., whose help in this direction is invaluable.

In my last report I said:—"One very important branch of work which could well be organised and carried out by voluntary bodies is the arranging for and procuring in every Rural School a change of stockings and a supply of slippers, in order that children coming from a distance in wet weather would not be under the necessity of sitting in their wet stockings and boots during the whole school day.

The Executive Committee of the Women's Institutes have been asked to take this matter into consideration, with a view to instituting and organising a scheme throughout the County."

During the past winter we received 132 pairs of slippers made by the members of various Women's Institutes, all of which were sent to selected schools in Rural Areas, but as we had requests for 1,047 pairs, we were far short of satisfying everyone.

Mrs. Mitton, of Bowness-on-Solway, was indefatigable in giving practical demonstrations in slipper making, and I gladly take this opportunity of expressing our thanks to her and our indebtedness to the Women's Institutes for their help.

XVI.—BLIND, DEAF, DEFECTIVE AND EPILEPTIC CHILDREN.

During the year sixteen deaf and dumb children and eight blind children were in institutions outside the County at the charge, either in whole or part, of the Education Authority.

XVII.—SECONDARY SCHOOLS.

Medical Inspection of the Secondary Schools in the County has been carried on as in previous years, but nothing calling for comment has occurred.

484 children were examined, and of this number 282, equivalent to 58 per cent. showed no defect.

The usual Tables relating to Secondary Schools follow. These do not, however, include the Whitehaven Secondary School figures, which will be found in Dr. Muriel's Report (see Appendix G.)

TABLE I.

A general statement of the numbers examined, of the defects found, and of treatment obtained:—

	Referred from 1927.	1928. *New Cases.*
Number of children examined ...	275	546
Number of re-examinations ...	96	16
Children with no defects ...	26	312
Number of children with defects referred for treatment ...	198	190
Left or absent at the re-visit ...	37	7
Children with all defects remedied	120	4
Children with some defects remedied or treated... ...	35	1
Promised to obtain treatment ...	46	34
Entirely untreated	45	2
Refused	—	—
Total number of defects referred for treatment	233	174
Total number of defects treated or partially treated... ...	184	5

TABLE II.

	Referred for Treatment.		*Referred for Observation.*		*Treated.*		*Partly Treated.*		*Promised to obtain Treatment.*		*Refused.*		*Untreated.*		*Left or absent at re-visit.*	
	From 1927	*Rout* 1928	*From* 1927	*Rout* 1928	*From* 1927	*Rout* 1928	*From* 1927	*Rout* 1928	*From* 1927	*Rout* 1928	*From* 1927	*Rout* 1928	*From* 1927	*Rout* 1928	*From* 1927	*Rout* 1928
Defective Teeth	100	95	3	1	57	—	10	—	43	28	—	—	31	3	17	1
Very Defective Teeth	10	5	—	—	3	—	2	—	9	5	—	—	7	—	5	—
Uncleanliness	1	1	—	—	—	—	—	—	1	1	—	—	—	—	2	—
Malnutrition	—	5	3	1	—	—	—	—	—	—	—	—	—	—	—	—
Pulmonary Tuberculosis	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Pre-Tubercular	1	—	2	—	1	—	—	—	—	—	—	—	—	—	—	—
Bronchitis and Weak Chest	6	5	34	21	6	—	—	—	1	2	—	—	—	—	6	—
Organic Heart Disease	1	1	11	4	—	—	—	—	1	1	—	—	—	—	2	—
Functional Heart Disease	—	—	28	23	—	—	—	—	—	—	—	—	—	—	5	—
Anæmia	4	6	—	1	2	2	—	—	—	—	—	—	2	—	—	—
Defective Vision	50	39	49	40	55	3	—	—	6	8	—	—	4	—	8	—
External Eye Disease	—	—	1	2	—	—	—	—	—	—	—	—	—	—	—	—
Otorrhœa	2	—	3	2	1	—	1	—	1	—	—	—	—	—	—	—
Defective Hearing	3	2	2	1	2	—	1	—	—	2	—	—	1	—	—	—
Tonsils	4	1	14	4	4	—	—	—	—	—	—	—	1	—	1	—
Adenoids	3	2	2	—	2	—	—	—	—	—	—	—	1	—	—	—
Tonsils and Adenoids	9	6	2	1	7	—	—	—	—	2	—	—	1	—	1	—
Nasal Obstruction	2	5	1	—	1	—	—	—	—	2	—	—	1	—	—	—
Non-Pulmonary Tuberculosis	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Spinal and Other Deformities	7	4	5	2	5	—	—	—	2	1	—	—	2	—	1	—
Nervous Diseases	—	1	1	—	—	—	—	—	—	1	—	—	—	—	—	—
Impetigo	—	1	—	—	—	1	—	—	—	1	—	—	—	—	—	—
Scabies	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Defects	19	21	30	12	18	—	2	—	5	5	—	—	1	—	5	—

SPECIAL ENQUIRIES.

(a) Goitre.

During 1928 a general survey was made of the children suffering from simple Thyroid enlargement to endeavour to estimate, so far as possible, whether the percentage of these children suffering from defects, which might be classed as deficiency defects, was larger than the percentage among children coming up for examination by age groups (as routines), with regard to the same defects. The result has been to show that children with Goitre are more free from deficiency defects than are other children.

By " deficiency defects " is implied such conditions as malnutrition, chronic bronchitis, tuberculosis and the pre-tubercular state, functional heart disease, non-infectious skin conditions, such as eczema, incontinence, boils, and matters of that kind. Such defects as tonsils and adenoids, defective vision, deafness, defective teeth, and so on, are obviously not relevant.

Of the 193 children with Thyroid enlargement noted at the routine inspections, no less than 153 had no defect of any kind. Fourteen had defects of a kind having no bearing on the question of deficiency, while twenty-four had defects of a kind which might be, and probably were, due to deficiency—twelve had some unsatisfactory condition of the lungs, seven had a heart affection of a functional nature, and five suffered from debility (of whom one was backward) and one case was incontinent.

It will be seen, therefore, that twenty-five children out of 193, or approximately 12.9 per cent. suffered from defects of this class. The proportion of defects of this class among routine examinations was 18 per cent.

The percentage comparison is quite a fair one, because the routine examinations are selected entirely at random simply on account of their age. Dr. Towers in his area of the County made a very careful investigation of the Goitre question (see Appendix B.), and he found that, in his area, the percentage of the Goitre children, who had relevant defects, was 9.9.

Dr. Towers carefully weighed all the Goitres he came across, and has compared their weights with those of the routine boys and girls of the same ages. The small numbers

at some age groups render his chart somewhat misleading for reproduction, but at the age groups, at which there were appreciable numbers, a fair comparison may be made between the weight of the normal child and the weight of the Goitre child for the same area. These ages are 8—9, 9—10, 12—13, 13—14, at which ages there were weighed— 17, 8, 29 and 16 Goitres respectively. These were *all girls*, the numbers among the boys being too few to be of much value for comparison. At 8—9 Dr. Towers found that the Goitre girl is praetically on a par for weight with the routine girl. At 9—10 the Goitre girl is considerably higher in weight than the average routine girl, and from 12 onwards the same statement applies, only that the difference becomes more marked in favour of the Goitre girl. These observations as regards percentage of defects and as regards Dr. Towers' notes on the respective weights of these two classes merely confirm in figures the opinion, which the whole Medical Staff of this County has long held, that the child with an obvious Thyroid enlargement is above normal in regard both to physique and freedom from illness.

Dr. Mark Fraser, in his area, found that approximately 50 per cent. of the children with Goitres were children of exeeptional physique. We have in this County for a long time regretted the attention which is being paid throughout England to Goitre as such. We have always maintained that the Goitre child is perfectly capable of looking after himself, or herself, because whether or not it be that the enlargement of the Thyroid represents, as many believe, a summoning together of the forces of the resistance of the body in an Iodine deficieney area, there is no doubt that, as has already been said, such children represent, broadly speaking, the pick of the child community. It is extremely unfortunate that such an immense amount of investigation is being made towards the solution of a problem which has little, if any, practical bearing on the health of the school child. It might, of course, be said that this is too strong an inference to draw from one year's Medical Inspection, and it is only made because, before this investigation was made in 1928, the opinion of all the Medical Staff on their experience of many years was unanimous on this point. In our opinion in Cumberland the existence of simple Goitre is merely important as a danger signal in-so-far as that if they are general in any area they do indicate widespread Iodine deficiency, and where there are many children with Goitre in any area there will undoubtedly be many more children without Goitres whose metabolism is liable to break down because they are, in fact, suffering from Iodine deficieney.

It is only in-so-far as Goitre draws attention to these children that it is a matter of practical importance.

(b) Mentally Defective and Dull and Backward Children.

During the year Head Teachers were asked to send in returns showing how many children in their schools were, in their opinion, mentally defective, or dull and backward. They were asked to omit from the dull and backward class, those who were in this condition owing to more or less prolonged illness, some teachers did this, but others did not.

Similarly, the fact regarding legitimacy, or otherwise, was only noted spasmodically, so that the data on these points cannot be regarded as quite reliable.

The percentage of these cases was enquired into, and the facts elicited are, I think, of sufficient interest to make an extension of the enquiry desirable, when time and opportunity permit.

Altogether the family and personal histories of 273 children were enquired into, of this number thirty-seven were classified as mentally defective, 232 as very backward, and four as epileptics.

The following Table shows at a glance the scope of the enquiry and the results as regards family history:—

TABLE A.

Number of backward children seen	232
Due to illness, etc.	85
Illegitimate—	
Mother sub-normal	7
Mother O.K.	2
One parent mentally sub-normal	19
Both parents mentally sub-normal	45
One parent epileptic	2
Parents mentally normal	19
Parents O.K., but family history bad ...	2
Parents syphilitic	2
Inter-marriage	2
Nothing known, *re* parentage...	47

Number of mentally defective children ...	37
Due to illness, etc.	1
Illegitimate—	
Mother sub-normal	3
One parent mentally sub-normal	5
Both parents mentally sub-normal	8
Parents mentally normal	5
Parents O.K., but family history bad ...	1
Parents syphilitic	1
Nothing known, *re* parentage...	13
Number of epileptics	4
Parents mentally normal	2
Nothing known, *re* parentage...	2

If now we exclude from consideration all children backward, due to illness, etc., and those whose parentage could not be traced, we have 123 left. The family history of these is shown in following Table:—

TABLE B.

Excluding backwardness due to illness, etc., and parentage not traced.

Number of backward children	100	
Parents sub-normal	71	(71 per cent.)
Parents epileptic, syphilitic, or inter-married	6	(6 per cent.)
Parents normal, but bad family history	2	(2 per cent.)
Parents normal	21	(21 per cent.)
Number of mentally defective...	23	
Parents sub-normal	16	(70 per cent.)
Parents epileptic, syphilitic, or inter-married	1	(4 per cent.)
Parents normal, but bad family history	1	(4 per cent.)
Parents normal	5	(22 per cent.)

It is not the low grade imbecile, or idiot, who is the danger to the community by the perpetuation of their species, it is the high grade mental defective.

This Table brings out in a very striking manner the fact that of 123 dull and backward or mentally defective children, the parents of over 70 per cent. were mentally sub-normal, and that the parents of some 8 per cent. were epileptic, had had syphilis, had inter-married, or had a bad family history. These high grade mental defectives, and many of the dull and backward, who are at present border-line cases, will, if left alone, undoubtedly in the future either marry and have children, or else have illegitimate children, and so the proportion of mental defectives is increased.

They are all lacking in self-respect, self-confidence, and self-control, which cannot be instilled into them, either in their own homes or in a Public Elementary School, therefore, Special Schools ought to be provided for them.

Special Schools have proved in the case of many of such children very effective in creating a sense of responsibility, training the child's intelligence, wherever it can be trained, encouraging initiative and the performance of everyday tasks, instructing them in manual work and many other activities.

One fact is to be noted, however, which to such children is of vast importance, namely, that in order to be effective training must commence very early in life. Many people at the present time are detained, necessarily for their own protection, in institutions, who, had they been sent to Special Schools and institutions early in life for training, would now be self-supporting and self-respecting citizens, many of them able to earn their own living, whereas, now they are a permanent drain on the rates.

By such a process it would be possible to weed out those who should, for their own sake, and for the protection of the community, be kept under control when they pass out of the sphere of the Education Authority.

Miscellaneous.

(*a*) Exclusion of children from school on medical grounds:—Seventy-five children were excluded by the School Medical Officer for periods of one month or over, and twenty were excluded permanently.

(*b*) Examinations of Teachers (on appointment), Pupil Teachers, and Bursars:—

New Cases.	1928.
Number Examined	115
Number without Defects	77
Number with Defects:	
Defective Teeth	16
Defective Eyes	7
Other Defects	15

Of the above.

Number Re-examined	2
Defects Remedied	2
Defects still Unremedied	36

Cases Referred from 1927.

Number of Cases	6
Number Re-examined	6
Number found Fit on Re-examination ...	4
Number with Defects still Unremedied ...	2
Number given up Teaching	—

APPENDIX A.

XXIV.—*STATISTICAL TABLES*

For the Year 1928.

Table I.—Number of Children inspected.

Table II.—Return of Defects found.

Table III.—Numerical Return of all exceptional Children

Table IV.—Treatment of Defects of Children.

TABLE I.

RETURN OF MEDICAL INSPECTIONS.

A.—Routine Medical Inspections.

Number of Code Group Inspections:—

Entrants.	*Intermediates.*	*Leavers.*	*Total.*
2848	2729	2362	7939

Number of other Routine Inspections:—

Nil.

B.—Other Inspections.

Number of Special Inspections	8948
Number of Re-inspections	3250
Total number of other Inspections	12198

TABLE II.

A.—RETURN OF DEFECTS FOUND BY MEDICAL INSPECTION

In the Year Ended 31st December, 1928.

DEFECT OR DISEASE.		*Routine Inspections. No. of Defects.*		*Special Inspections No. of Defects.*	
		Requiring treatment.	Requiring to be kept under observation, but not requiring treatment.	Requiring treatment.	Requiring to be kept under observation, but not requiring treatment.
(1)		(2)	(3)	(4)	(5)
Malnutrition		13	8	42	8
Uncleanliness		54	18	100	20
Ringworm :—					
Head		7	1	56	—
Body		4	1	46	—
Scabies		16	—	32	—
Impetigo		46	6	513	—
Other Diseases (Non-Tubercular)		35	13	449	19
Eye	Blepharitis	26	1	120	4
	Conjunctivitis	5	1	33	3
	Keratitis	—	—	3	1
	Corneal Ulcer	—	—	—	—
	Corneal Opacities	2	2	7	5
	Defective Vision	293	409	410	721
	Squint	24	14	31	22
	Other Conditions	36	54	84	105
Ear	Defective Hearing	13	16	49	25
	Otitis Media	36	26	113	27
	Other Ear Diseases	21	1	34	6
Nose and Throat	Enlarged Tonsils	88	359	117	395
	Adenoids	40	58	56	50
	Enlarged Tonsils and Adenoids	56	49	82	71
	Other Conditions	9	8	52	22
	Enlarged Cervical Glands (Non-Tubercular)	10	115	25	145
	Defective Speech	—	25	—	30
Teeth	Dental Diseases	259	13	254	19
Heart and Circulation	Heart Disease :—				
	Organic	8	57	13	73
	Functional	1	194	2	207
	Anæmia	71	7	100	—
Lungs	Bronchitis	36	91	106	47
	Other Non-Tubercular Diseases	62	433	79	524
Tuberculosis	Pulmonary :—				
	Definite	3	3	54	8
	Suspected	21	1	44	11
	Non-Pulmonary :—				
	Glands	5	6	15	6
	Spine	—	1	—	—
	Hip	—	1	3	6
	Other Bones & Joints	—	1	4	3
	Skin	—	—	2	—
	Other Forms	1	—	4	3
Nervous System	Epilepsy	1	11	7	12
	Chorea	3	1	18	6
	Other Conditions	26	3	50	22
Deformities	Rickets	5	2	21	2
	Spinal Curvature	—	—	3	—
	Other Forms	26	35	53	54
Other Defects and Diseases		75	49	710	157
Goitre		15	96	46	84
		1452	2190	4042	2923

TABLE II.

B.—NUMBER OF INDIVIDUAL CHILDREN FOUND AT ROUTINE MEDICAL INSPECTION TO REQUIRE TREATMENT (EXCLUDING UNCLEANLINESS AND DENTAL DISEASES).

	Number of Children.		*Percentage of Children found to require Treatment.*
	Inspected.	*Found to require Treatment.*	
Code Groups :—			
Entrants	2848	541	19%
Intermediates	2729	488	18%
Leavers	2362	285	12%
Total (Code Groups)	7939	1314	16%
Other Routine Inspections	—	—	—

COUNTY OF CUMBERLAND.

SCHOOL MEDICAL SERVICE.

TABLE III.—RETURN OF ALL EXCEPTIONAL CHILDREN IN THE AREA.

			Boys.	*Girls.*	*Total.*
Blind (including partially Blind)	Suitable for training in a School or Class for the Totally Blind	Attending Certified Schools or Classes for the Blind	—	2	2
		Attending Public Elementary Schools	—	—	—
		At other Institutions	—	—	—
		At no School or Institution	2	—	2
	Suitable for training in a School or Class for the Partially Blind	Attending Certified Schools or Classes for the Blind	2	4	6
		Attending Public Elementary Schools	—	—	—
		At other Institutions	—	—	—
		At no School or Institution	—	—	—
Deaf (including Deaf and Dumb and partially Deaf)	Suitable for training in a School or Class for the Totally Deaf or Deaf and Dumb	Attending Certified Schools or Classes for the Deaf	8	5	13
		Attending Public Elementary Schools	2	1	3
		At other Institutions	—	—	—
		At no School or Institution	2	1	3
	Suitable for training in a School or Class for the Partially Deaf	Attending Certified Schools or Classes for the Deaf	1	2	3
		Attending Public Elementary Schools	6	13	19
		At other Institutions	—	—	—
		At no School or Institution	—	—	—
Mentally Defective	Feeble-minded (Cases not notifiable to the Local Control Authority)	Attending Certified Schools for Mentally Defective Children	—	—	—
		Attending Public Elementary Schools	19	18	37
		At other Institutions	—	—	—
		At no School or Institution	11	7	18
	Notified to the Local Control Authority during the year.	Feeble-minded	—	—	—
		Imbeciles	10	10	20
		Idiots	2	2	4
Epileptics	Suffering from severe Epilepsy	Attending Certified Schools (Special) for Epileptics	—	—	—
		In Institutions other than Certified Special Schools	—	—	—
		Attending Public Elementary Schools	15	8	23
		At no School or Institution	6	5	11
	Suffering from Epilepsy which is not severe	Attending Public Elementary Schools	—	—	—
		At no School or Institution	—	—	—
Physically Defective	Infectious and Pulmonary and Glandular Tuberculosis	At Sanatoria or Sanatorium Schools approved by the Ministry of Health or the Board	—	1	1
		At other Institutions	—	—	—
		At no School or Institution	—	—	—
	Non-infectious but active Pulmonary and Glandular Tuberculosis	At Sanatoria or Sanatorium Schools approved by the Ministry of Health or the Board	13	16	29
		At Certified Residential Open Air Schools	—	—	—
		At Certified Day Open Air Schools	—	—	—
		At Public Elementary Schools	26	25	51
		At other Institutions	—	—	—
		At no School or Institution	3	6	9
	Delicate Children (e.g., pre or latent Tuberculosis, Malnutrition, Debility, Anæmia, etc.)	At Certified Residential Open Air Schools	—	—	—
		At Certified Day Open Air Schools	—	—	—
		At Public Elementary Schools	919	871	1790
		At other Institutions	—	—	—
		At no School or Institution	6	9	15
	Active Non-Pulmonary Tuberculosis	At Sanatoria or Hospital Schools approved by the Minister of Health or the Board	—	1	1
		At Public Elementary Schools	10	7	17
		At other Institutions	—	—	—
		At no School or Institution	1	1	2
	Crippled Children (other than those with active Tuberculous Disease, e.g., Children suffering from Paralysis, &c., and including those with severe Heart Disease)	At Certified Hospital Schools	6	9	15
		At Certified Residential Cripple Schools	—	—	—
		At Certified Day Cripple Schools	—	—	—
		At Public Elementary Schools	157	164	321
		At other Institutions	—	—	—
		At no School or Institution	41	35	76

RETURN OF DEFECTS TREATED DURING THE YEAR ENDED 31st DECEMBER, 1928.

TREATMENT TABLE IV.

GROUP I.—MINOR AILMENTS (EXCLUDING UNCLEANLINESS, FOR WHICH SEE GROUP 5).

Disease or Defect	*Number of Defects Treated or under treatment during the year.*		
	Under the Authority's Scheme.	*Otherwise.*	*Total.*
(1)	(2)	(3)	(4)
Skin.			
Ringworm—Scalp	57	1	58
Ringworm—Body	44	3	47
Scabies	22	1	23
Impetigo	480	6	486
Other Skin Diseases	221	23	244
Minor Eye Defects ... ... (External and other, but excluding cases falling in Group 2).	207	55	262
Minor Ear Defects	141	9	150
Miscellaneous ... ... (e.g., Minor Injuries—bruises, sores, chilblains, etc.)	908	71	979
Total	2080	169	2249

TABLE IV.

GROUP II.—DEFECTIVE VISION AND SQUINT (EXCLUDING MINOR EYE DEFECTS TREATED AS MINOR AILMENTS)—GROUP I.

Defects or Disease.	*Number of Defects dealt with.*			
	Under the Authority's Scheme.	*Submitted to refraction by Private Practitioner or at Hospital, apart from the Authority's Scheme.*	*Otherwise.*	*Total.*
(1)	(2)	(3)	(4)	(5)
Errors of Refraction (including Squint). Operations for Squint should be recorded separately in the body of the Report)	561	40	—	601
Other Defects or Disease of the Eyes (excluding those recorded in Group 1	21	2	—	23
Total	582	42	—	624

Total Number of Children for whom Spectacles were prescribed :

(a) Under the Authority's Scheme 536

(b) Otherwise 24

Total Number of Children who obtained or received spectacles :

(a) Under the Authority's Scheme 507

(b) Otherwise 16

GROUP III.—TREATMENT OF DEFECTS OF NOSE AND THROAT.

Number of Defects.				
Received Operative Treatment.				
Under the Authority's Scheme, in Clinic or Hospital.	*By Private Practitioner or Hospital apart from the Authority's Scheme.*	*Total.*	*Received other forms of Treatment.*	*Total Number Treated.*
300	136	436	15	451

TABLE IV. GROUP IV.—DENTAL DEFECTS.

(1) Number of Children who were:—				
(a) Inspected by the Dentist:—				
	Aged.			
	5	298		
	6	402		
	7	571		
	8	627		
	9	446		
Routine Age Group	10	426	Total	4290
	11	451		
	12	444		
	13	524		
	14	101		
Specials				107
Grand Totals ...				4397
(b) Found to require treatment ...				3506
(c) Actually treated				1849
(d) Re-treated during the year as the result of periodical examination				451
(2) Half days devoted to Inspection		38		
Treatment		302	Total	340
(3) Attendance made by Children for treatment				2294
(4) Fillings ... Permanent Teeth		303		
Temporary Teeth		—	Total	303
(5) Extractions Permanent Teeth		1549		
Temporary Teeth		4292	Total	5841
(6) General anæsthetics administered for extractions				2103
(7) Other Operations Permanent Teeth		340		
Temporary Teeth		—	Total	340

GROUP V.—UNCLEANLINESS AND VERMINOUS CONDITIONS.

(1) Average number of visits per school made during the year by the School Nurses	3
(2) Total number of examinations of children in the schools by School Nurses	58219
(3) Number of individual children found unclean ...	756
(4) Number of children cleansed under arrangements made by the Local Education Authority ...	—
(5) Number of cases in which legal proceedings were taken:—	
(a) Under the Education Act, 1921... ...	—
(b) Under School Attendance By-laws ...	—

SPECIAL ENQUIRY.

AN ENQUIRY into the EFFECT OF IODINE IN REDUCING LOSS OF ATTENDANCE FROM EPIDEMIC SICKNESS IN ELEMENTARY SCHOOLS IN CUMBERLAND

BY

KENNETH FRASER, M.D., F.R.S.E., D.P.H.,
Deputy School Medical Officer.

General.

During the Winter of 1928-29 a very extensive investigation was conducted in the Elementary Schools of Cumberland into the effect (if any) of Iodine in one form or another in reducing the loss of attendance from epidemic sickness.

The experiment was undertaken for a variety of reasons.

Some years ago there was published a reference in the Journal of the "American Medical Association" to the experiment by Lombardo in using Iodine as a prophylactic for children in Elementary Schools in Influenza epidemic. As a result of the experiment, which consisted of heating a solution containing Iodine, Potassium Iodide and water for half-an-hour in the schoolroom daily, Lombardo reported that the children in the class-room concerned escaped the Influenza epidemic, while the other children in the same school were widely affected. The same idea approximately was attempted in Germany some years ago, and also in certain of the American cities in the Goitre Belt. We had prolonged correspondence with Mr. Ward, the Chief Chemist of Crookes Collosals Ltd., on the best method of liberating Iodine into the class-rooms. Mr. Ward throughout collaborated with Sir William Pope, the Consulting Chemist of the same firm, in his observations. These advisers considered that to liberate Iodine in a nascent state was impracticable, partly on account of the expense, but he considered that the slow liberation of free Iodine might be practicable. After prolonged experiments Mr. Ward and Sir William Pope came to the conclusion that the best method to attain this end would be to combine metallic Iodine in blocks of Naphthalene, and a few such experimental blocks were received here towards the Autumn of 1927.

Some of these were suspended in one of the biggest schools of the County during the Winter of 1927-28, and towards the end of the winter the Headmistress reported:—

> "I tried these tablets in my school and there is no doubt at all but that they help to ward off bad colds and Influenza."

Desiring, therefore, to put the matter to a more conclusive test, a large number of blocks were provided by Crookes Collosal Ltd. and were suspended during the winter in selected schools. The schools selected were—one large school in Millom, one large and one small school in Maryport,

all the schools in the Egremont area, and all the schools in the Arlecdon and Frizington area. For the purpose of controls to which no Iodine blocks were supplied the other schools in Millom and Maryport were taken, and as regards Egremont and Arlecdon and Frizington the area of Cleator Moor was taken as a control. The comparison in this case was exceptionally good, because Cleator Moor lies between the other two areas, and is in all respects similar. It should be added that the blocks contained 10 per cent. Iodine in Naphthalene. Simultaneously, the children in the Alston area were given Iodised Tablets throughout the winter of 1928-29. This was done, not in any sense for prophylaxis against epidemics, but simply because the Alston area is notoriously a Goitre area, and the Head Teachers and parents in that area were most anxious that their children should receive a course of Iodine treatment. In this area each child, whose parent signed a written form of consent, was given one Iodised Tablet (Parke, Davis & Co.) each week throughout the winter. These Iodised Tablets contain the equivalent of one-tenth grain of Iodine. The great majority of the parents in this area consented to this treatment, in fact, were most anxious for it, and practically the whole of the cost was borne by the parents themselves, who paid 6d. per child, which approximately covered the outlay. It has, therefore, been possible, throughout the winter, to investigate the effect of Iodine externally and internally on the question at issue.

Theoretically, the effect of free Iodine in the air of a class-room should be partially disinfectant of the air and of the naso-pharynx, and partially should allow for absorption of a small amount of Iodine through the mucous membrane of the throat and bronchial passages, thus, not merely disinfecting these passages against organisms, but allowing the child to benefit by the Iodine absorbed. It is, of course, obvious that the amount of Iodine absorbed, and indeed the amount of free Iodine in the air, can only be limited even with a 10 per cent. concentration in the block, as, with open windows and doors, the air is constantly changing.

It was found that the blocks had practically lost their Iodine by the end of three months, and, therefore, at the end of that time a fresh supply of blocks was issued to the schools concerned.

Instructions to the Head Teachers on the method of suspension, and so on, were given by Dr. Towers and Dr. Simpson in their respective areas.

At the end of the year the Head Teachers in all the schools concerned, and in all the control schools, were asked to forward the *percentage* of attendance in the schools for the period 1st October to 31st March during the winters 1926-27, 1927-28 and 1928-29. In the schools in which Iodine in any form was used, the Teachers were also asked to give their opinion on the result of the experiment in reducing epidemic sickness. The winter of 1928-29 provided, of course, an extraordinary severe test. For one thing, the prolonged and exceptionally severe frost, and the general severity of the winter mitigated against good attendance in any event. As a matter of fact, repeated references reached us on the almost starvation point at which some schools were working, and actually schools had to be closed because of the failure of the heating apparatus to combat the severe cold.

The winter was also exceptional for the widespread epidemic of Influenza. Both of these conditions, on account of their severity, would normally have very materially reduced the percentage attendance in the schools of the County, and in their observations practically all Head Teachers have pointed out that the Iodine experiment, if one may so call it, has not had a fair test during the winter on this account.

There is another point to elaborate, and that is this. Later on in this report it will be pointed out that there was a very material reduction in the number of days in which the " Iodine Schools " were closed on account of epidemic sickness during this winter, as compared with the "Non-Iodine" Schools. The bearing of that point on the figures is this. **The school which is so badly hit by an epidemic that it has to be closed shows up much better as regards percentage attendance than the school which is not so badly hit by an epidemic, and which carries on with an affected attendance which reduces the percentage for the period.**

That is a most important point, and it has, therefore, to be remembered that each day gained in keeping a school open means, or probably means, that the school concerned is handicapped as regards percentage attendance in comparison with the school which is closed on account of the epidemic. While, therefore, it is true, as regards the Alston area, that the percentage of attendance from the 1st October, 1928, to the 31st March, 1929, was lower than in either of the two preceding years, and while there were three closures

in this area in the period, as compared with none in either of the two preceding winters, yet the fact that with the various handicaps above referred to the percentage attendance for the whole area for the period was 86.1, as against 88.3 for the previous winter, is really representing a very much better state of affairs than would at first appear.

Taking the County as a whole, and including the Alston area, twenty-three schools have been supplied with Iodine in one form or another. There have also been twenty-three schools whose records have been kept for control purposes, as previously explained, but have not had Iodine in any form. Among the twenty-three Iodine Schools there have been ten closures; among the twenty-three Non-Iodine Schools there have been thirteen closures, but the average length of closure among the Iodine Schools was seven days, and the average length of closure among the Non-Iodine was twelve days, or put it in another way, *the twenty-three Iodine Schools were closed during the six months for seventy-three days in all, while the twenty-three Non-Iodine Schools were closed during the same period for 155 days.*

The area which has provided the best test has, of course, been the industrial area of Egremont, Cleator Moor, and Arlecdon and Frizington.

The percentage attendance in Egremont, Arlecdon and Frizington, for the winter of 1928-29, has been 85.8; this area was supplied with Iodine Blocks. The percentage attendance in Cleator Moor and Cleator, to which no Iodine Blocks were supplied, has been 83.8, and the difference in favour of the schools with Iodine Blocks would have been very much greater had not every school in the Cleator Moor and Cleator areas been closed—in some cases twice. In the Egremont and Arlecdon and Frizinton area half of the schools did not require to be closed at all, and, as has been previously pointed out, this most materially reduces the percentage attendance.

We have been extremely obliged for the co-operation and help of the Head Teachers of the schools concerned. The great majority of whom have given valuable assistance. The comments from some schools were not altogether relevant to the point at issue, and brought in such matters as the state of the roads, the issue of free clothing, unemployment, and so on. Of the comments, which appear relevant, the following are interesting:—

Alston Area.

Garrigill.

The absence of colds among the children has been most noticeable. Parents were pleased with the benefit derived by children from taking Iodine Tablets, and asked for a second course. Twenty cases of Whooping Cough occurred (all on Iodine) and in nearly every case the duration of the disease was materially shortened.

Tynehead.

The Iodine Tablets have not had a fair test.

Nenthall.

In my opinion the Iodine treatment has been very beneficial to the general health of the children.

Nenthead.

I do not think the treatment here has had a fair trial.

Alston High.

The exceptionally severe winter of 1928-29 has undoubtedly been against a fair test being made of the beneficial effects, or otherwise, of the Iodine treatment. In school, however, there has been an almost total absence of the irritating coughing, which has often been prevalent in past winters.

Leadgate.

The general health of the children being treated has improved, although weather conditions have been very trying. The Headmistress remarks that the health of the children taking Iodine Tablets has been much better than that of the other children. Of eight children who contracted Whooping Cough four taking Iodine had very mild attack compared with the other four.

Alston Infants.

No comment.

West Cumberland Area.

In this area many Head Teachers remarked that the Iodine Blocks have not had a fair test owing to the severity of the winter.

Egremont Bookwell Infants.

The impression of probable benefits derived from the general use of the Bloeks are very favourable. Undoubtedly they have proved valuable.

Frizington Council Mixed and Infants.

There is no gainsaying that the Bloeks have proved their worth in this school. This is elear from the eomparison of the attendanees with previous winters, and from the health of the staff. The Head Teaeher had Influenza during the two previous winters, but eseaped this winter during the epidemie.

Egremont St. Bridget's Roman Catholic.

My general impression is that the number suffering from epidemies is eonsiderably less sinee the introduetion of the Bloeks than in previous years.

Egremont Central Girls.

The siekness has been less severe this winter.

Bookwell Boys.

There has been no closure this winter, and epidemic siekness has been less prevalent, exeept in the ease of Influenza.

Lapstone Road Boys.

An Iodine Bloek was exposed in the top form room in this school during the winter of 1927-28. Exaet statistics were not kept, but I ean state that both teachers and scholars in this room suffered less than those in the other rooms. I would estimate that fully 5 per eent. inereased attendanee for the six months was probably attributable to this experiment.

Lapstone Road Girls.

I think that the suspension of the Iodine Bloeks in the elass-rooms of the sehool have helped in the general health of the seholars. Judging from the percentages for the past three years, that of 1928-29 is mueh better than that of 1927-28, and that of 1927-28 is again mueh better than that of 1926-27. During *part* of 1927-28 Iodine Blocks were used in this school. In 1926-27 we had a elosure, but during the two following winters no elosures were necessary.

The attendances at Lapstone Road Girls' School lost from epidemic sickness, including Influenza, common colds, and including contacts of certain epidemic diseases, were as follows:—

1926-27 (no Blocks)	2195
1927-28 (Blocks for part of winter) ...	1536
1928-29 (Blocks all winter)	1275

APPENDIX B.

NOTES

ON THE

WEIGHT OF CHILDREN

IN THE

ELEMENTARY SCHOOLS

OF

WEST CUMBERLAND

WITH CHARTS

BY

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Assistant School Medical Officer.

WEIGHT CHARTS.

In the following notes, the term " Area " refers to No. 6 Medical Area, which comprises the following districts:—

Cleator Moor Urban.
Arlecdon and Frizington Urban.
Harrington Urban.
Whitehaven Rural.
Millom Urban.
Bootle Rural.

Towards the end of 1927, it occurred to me that it would be interesting to have a record of the average weight of children of school age in this area, and to compare this with similar figures taken some fifteen years ago.

The weighing of several thousand children had taken a considerable time, commencing in October, 1927, it was not completed till November, 1928, and the immense mass of figures collected has since had to be dealt with. Needless to say, the whole matter was approached with an open mind, with no idea what the figures would show.

I have prepared a series of charts giving the results.

In all, 6,303 children were weighed, 3,206 boys and 3,097 girls.

The distribution of these children in their respective districts is as follows:—

	Cleator Moor, Urban.	Arlecdon and Frizington, Urban.	Harrington, Urban.	Whitehaven, Rural.	Millom, Urban.	Bootle, Rural.
B.	646	431	257	921	661	290
G.	690	414	232	866	621	274

The age distribution was as follows:—

	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15
B.	109	275	319	388	415	355	339	298	292	330	86
G.	75	269	340	367	369	332	327	329	316	311	62

Chart No. 1.

Shows the weight curve of *Boys* in the whole area according to ages, and compares this curve with two others, viz.:—

(a) County Areas in England and Wales, 1913.
(b) Cumberland County, 1913.

Chart No. 2.

Similar to No. 1, but refers to *Girls* instead of boys.

In both these charts, it will be noticed that there are gaps in the curves for England and Wales and Cumberland for 1913. The reason for this is that only "Entrants" and "Leavers" were weighed in Cumberland in 1913, and, therefore, no comparison in weight is possible between these ages.

These two charts illustrate that the average weight in 1928 is slightly higher than it was in 1913, that this difference is not so marked in the earlier years, but becomes progressively more pronounced after the 12-13 age group.

It is a fair inference, I think, that the general physique of boys and girls in this part of West Cumberland has certainly not deteriorated in the past fifteen years, in spite of the very widespread unemployment, which has existed during the latter half of this period. One is justified in concluding that it is even better than it was.

It is not very easy to see why this should be so. Superficially considered, one would have expected the curve for 1928 to be below that for 1913 for the reasons given. Against this, however, there are some rebutting circumstances.

At all times, it is the weakling that goes to the wall, and the more so in times of stress, and it is these very weaklings that would tend to pull down the average weight. *But also, it is these same weaklings that have had the most benefit from supervision and treatment under the school clinic system, with all that that implies, and during the years of greatest need.*

Further, during the periods of acutest distress, when the quality of their feeding sinks to an unusually low level, the putting into operation the Provision of Meals Act saves the situation, and their food, instead of falling in quality, rises beyond anything they are accustomed to. I think these two factors have a very great deal to do with it.

Goitre.

A chart (not here reproduced) was drawn to compare the average weight of all boys and girls in the area, with the weight of boys and girls showing definite thyroid enlargement. Owing to the paucity of numbers at certain ages (and to the complete absence at others) the " thyroid enlargement " curve shows some marked irregularities in continuity, which would doubtless disappear if a very much larger number of thyroid cases had been available.

The total number of cases found with definite thyroid enlargement was 121, of which twenty-six were boys and ninety-five were girls.

The age distribution of these was as follows:—

	4-6	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15
B.	1	2	1	—	7	3	2	1	5	4	—
G.	—	6	4	2	17	8	5	6	29	16	2

As one would expect, the thyroid is found to be enlarged more than $3\frac{1}{2}$ times as often in girls as in boys.

Further, of the ninety-five cases found in girls, no fewer than forty-seven occurred over the age of twelve. This is also in accordance with expectations.

The following is a division of the cases into the districts in which they occurred, together with the percentage figure to cases examined for this condition in each district. (Note.—Every boy and girl in each school was examined for thyroid enlargement).

	Cleator Moor, Urban.	Arlecdon, and Frizington, Urban.	Harrington, Urban.	Whitehaven, Rural.	Millom, Urban.	Bootle, Rural.
Cases.	25	20	2	47	20	7
% age.	1.87	2.36	.40	2.63	1.56	1.24

Two points at once become noticeable in this table:—

(1) Omitting Harrington, the more or less uniform distribution of cases throughout the district, and

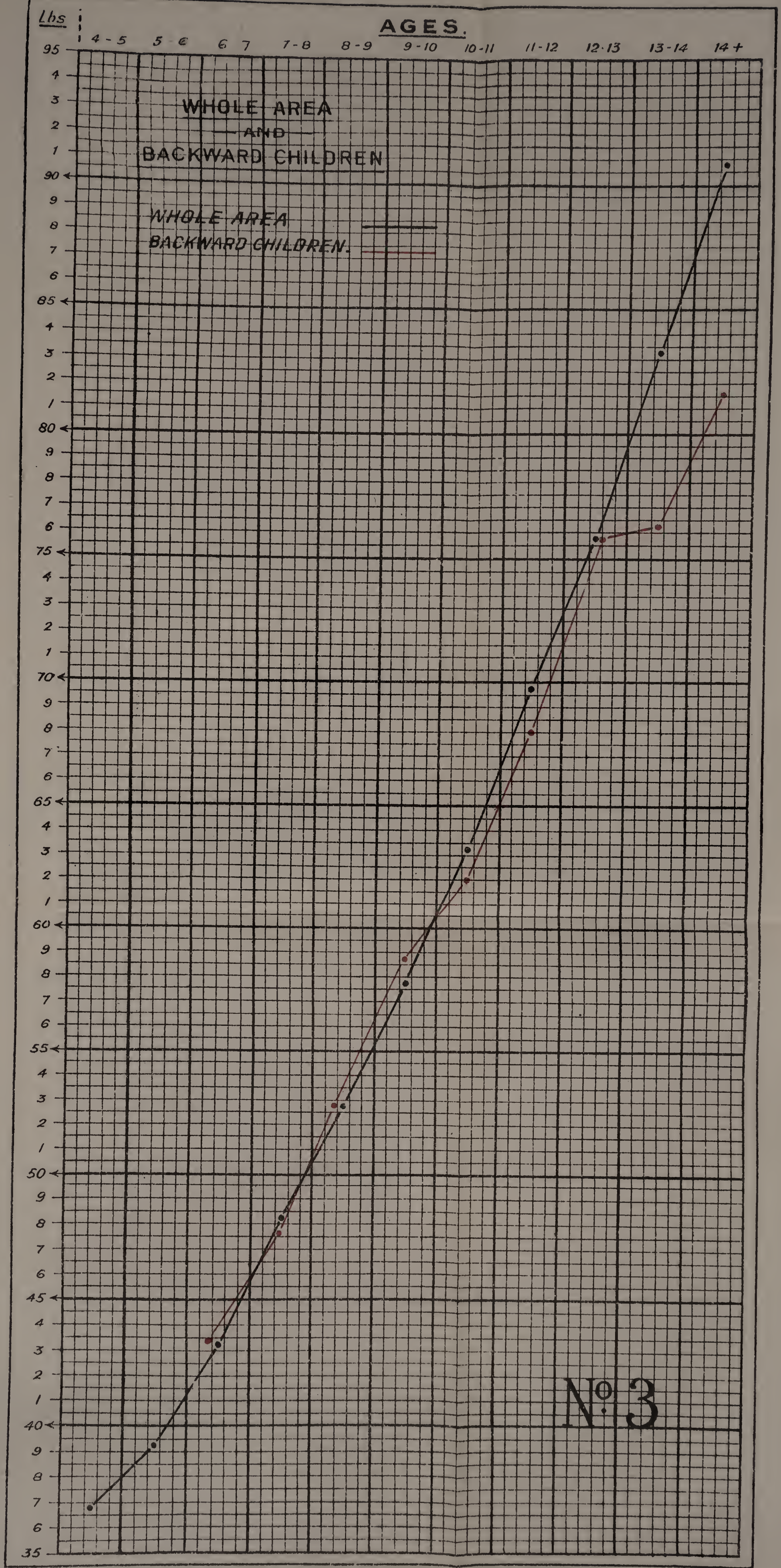
(2) the very marked exception in the case of Harrington, to which further reference will be made later.

The weight chart demonstrated that during the earlier years the child with a definite thyroid enlargement weighs less than the average child of the same age, that by the time it has reached 10-12 this difference has largely disappeared, and that after twelve it is definitely heavier than the normal.

This is another point I find very difficult to explain. If the view that an enlarged thyroid is indicative of some degree of iodine starvation, one would not expect children, the subject of this condition, to be not only heavier at certain ages, but unquestionably freer from defects than the average, as is shown later by figures. It might possibly be argued that an iodine deficiency is indicated in early life by an enlargement of the thyroid, the glands being stimulated to extra activity to make good this deficiency, further, that in so doing it is stimulated in other directions, e.g., metabolism generally and particularly that of Calcium. At any rate, I have not yet met with a child, who, having an enlarged thyroid, showed any signs of rickets.

From the age of twelve onwards, one is faced with the additional difficulty of the onset of puberty, with its effects, and, bearing in mind the possibility of a slight thyroid enlargement during menstruation, the increased number of cases found about this age (especially in the case of girls) is not surprising.

The following contrasts in the number of defects found in all children, as compared with the number found in children the subject of thyroid enlargement, is instructive, and bears out the impression I have long held, that as far as West Cumberland is concerned, at least, the latter group are far freer from defects than the former. Generally speaking, I have found that the child with thyroid enlargement is a particularly healthy specimen.


Lbs
AGES.
4-5
5-6
6 7
7-8
8-9
9-10
10-11
11-12
12-13
13-14
14+
WHOLE AREA
AND
BACKWARD CHILDREN
WHOLE AREA
BACKWARD CHILDREN.
95
90
85
80
75
70
65
60
55
50
45
40
35

Nº 3

Lbs.

AGES.

4-5 5-6 6-7 7-8 8-9 9-10 10-11 11-12 12-13 13-14 14+

95 4 3 2 1 90 9 8 7 6 85 4 3 2 1 80 9 8 7 6 75 4 3 2 1 70 9 8 7 6 65 4 3 2 1 60 9 8 7 6 55 4 3 2 1 50 9 8 7 6 45 4 3 2 1 40 9 8 7 6 35

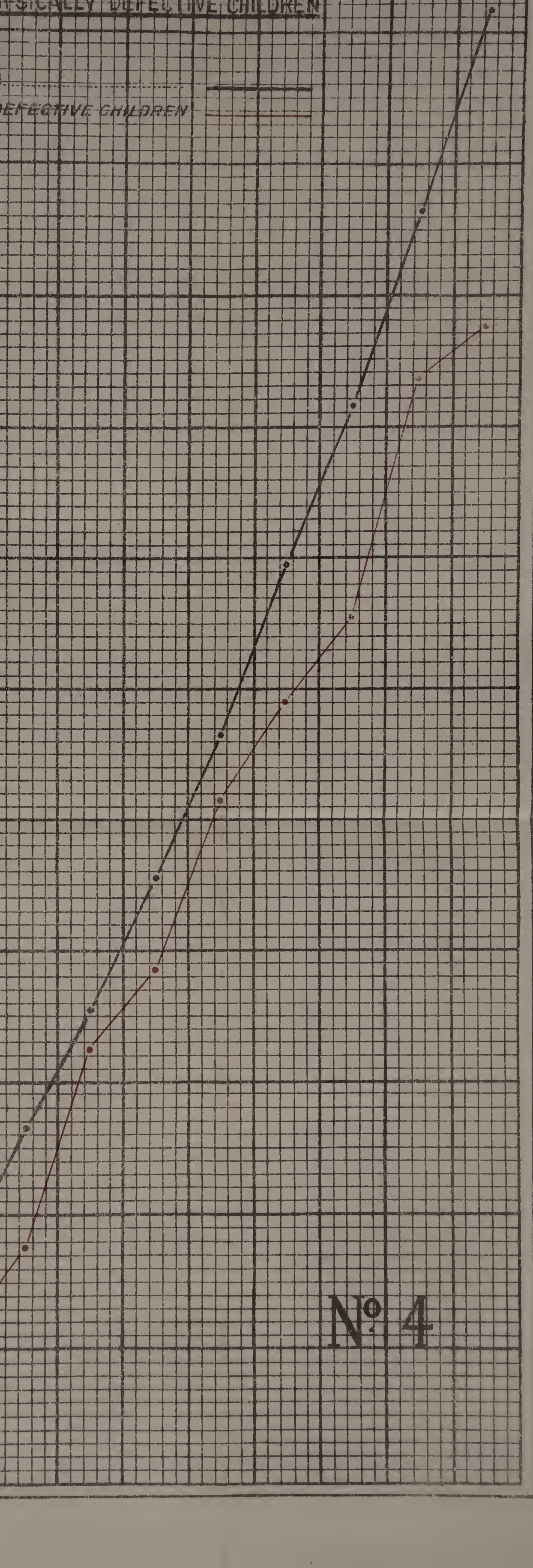
WHOLE AREA

AND

GROUP III PHYSICALLY DEFECTIVE CHILDREN

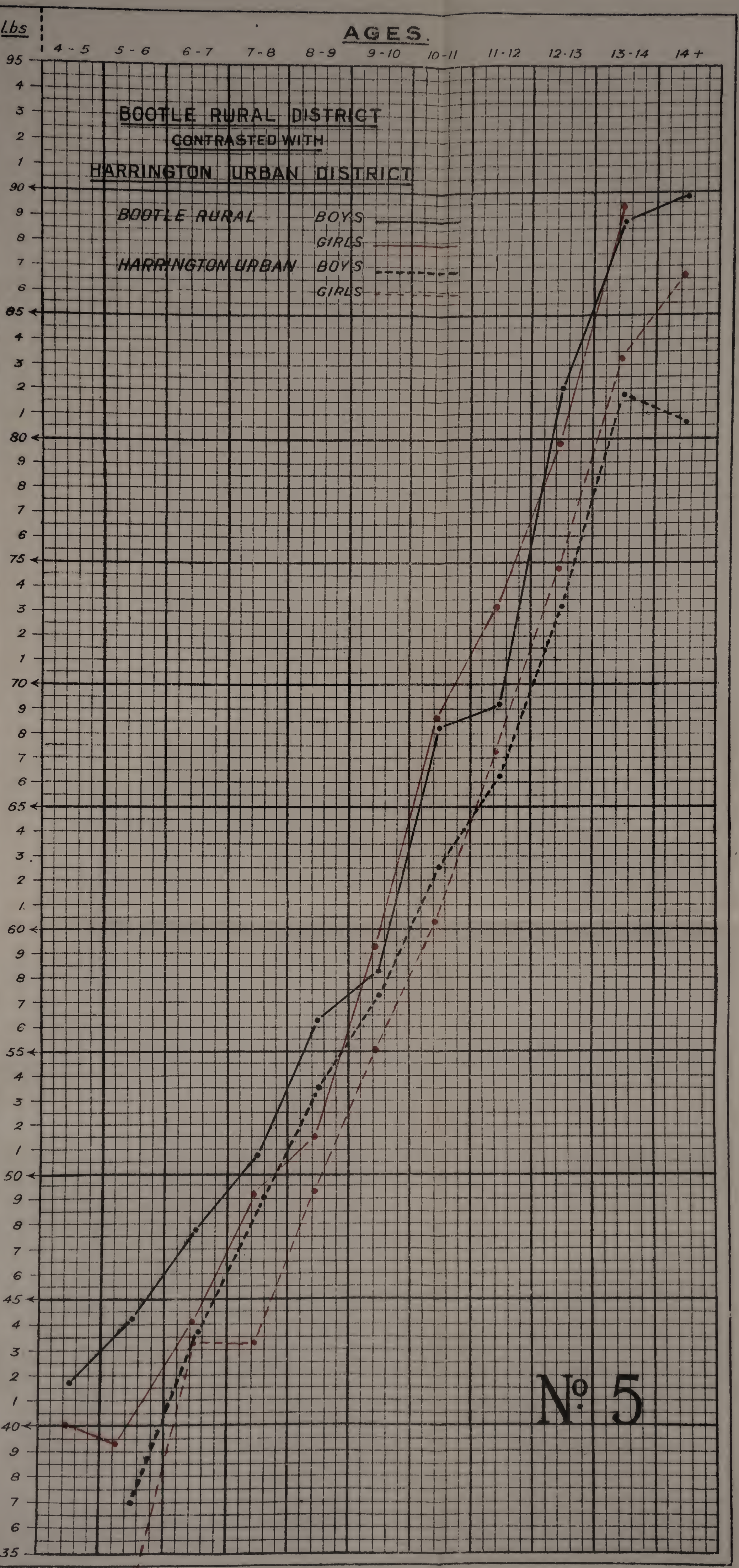
WHOLE AREA.....

PHYSICALLY DEFECTIVE CHILDREN



No. 4

BOOTLE RURAL DISTRICT
CONTRASTED WITH
HARRINGTON URBAN DISTRICT



№ 5

lbs
95
90
85
80
75
70

The figures given herewith were obtained in the following manner:—Nineteen schools were selected, which represented purely urban, purely rural, and some which could not be put in either category.

It was found that in these nineteen schools, 1,657 children were examined, either as routine or special cases. Of this number, 677 showed *some* defect. From these 677 defectives were subtracted those with such defects as ringworm, scabies, impetigo, wax in ears, certain deformities, defective vision, squint, otitis, and verminous conditions. There remained 322 with other defects.

For the sake of simplicity I have termed this "relevant" defects, and the proportion of these to the 1,657 examined is *19.4 per cent.* Against this, the 121 cases of enlargement of the thyroid gave thirteen defectives, which is *10.7 per cent.* of the total, or if one case is subtracted as not being " relevant " as above, the figure is *9.9 per cent.*

Chart No. 3.

Compares the average of the whole area, boys and girls together, with those children reported as " backward."

Nothing noteworthy emerges on investigating the distribution by ages or by districts. It does, however, show that on the whole the backward child is below the average physically.

Chart No. 4.

Similar to No. 3, the average being compared with that of children suffering from a group of defects, which I have termed for convenience " Group III." defects. They are: oral sepsis, enlarged tonsils and adenoids, otorrhœa, organic heart lesions, tubercular and " pre-tubercular " children. It illustrates very forcibly the way these children lag behind the average.

Chart No. 5.

In compiling these charts, it was noticed that curves for individual districts varied very little from the curve for the whole area, e.g., the curve for the Cleator Moor district practically coincides with that for the whole area, while that for Arlecdon and Frizington varies from it only very slightly. It is not, therefore, worth while submitting curves for these districts.

There are, however, two very marked exceptions to the above statement, and these are Bootle Rural and Harrington Urban districts. The curve for the former is considerably *above* that of the average, while that of the latter is considerably *below* it. To illustrate this, Chart 5, which brings the two extremes together, has been prepared. In this chart some irregularity in the continuity of the curves is again seen, inevitable where comparatively small numbers are involved, but they can leave no doubt as to the very marked difference.

What is the explanation, and what inferences are to be drawn from this? I have found it impossible to answer these questions satisfactorily. It seems to me that a very great deal of investigation and experimental work would be necessary to supply the answer, to carry out which is quite out of the question with the limited time at one's disposal.

I think it is only right and proper to state at once that *one* inference that can *not* be drawn is that children are not so well cared for and looked after in the Harrington district. It has been my experience to find that in no other district is there a greater interest taken in medical inspection, or a more earnest desire to have every possible defect remedied. At least six out of every ten children due to be examined at S.M.I. are accompanied by a parent, and it is exceptional to find a defect pointed out that has not been dealt with at the next inspection.

The number of serious defects are not, I think, any greater in Harrington than in any other district, though I am not in a position to offer any statistics on this point. But no weight curve is necessary to realise that the average child is smaller and lighter than in other districts.

Harrington is a coast town, with a small harbour, in the neighbourhood of which is an insanitary slum area, and containing a comparatively dense school population. On the other hand this constitutes a very small portion of the town, which contains a very high proportion of better class houses. Unemployment has been rife here, as elsewhere, but I doubt if it has been as bad as in such districts as Cleator Moor and Frizington.

There is some evidence to show that the feeding generally is not all it should be, not as regards quantity, but quality. This, of course, is noticeable in most districts,

but it has been more forcibly brought to my notice in Harrington. To quote one example, typical. A mother expressed distress at the smallness of her boy. She told me she gave him " plenty of variety " in his food. On going into details, the meals were as follows. Breakfast: oatmeal porridge and milk, with bread and marmalade and tea. Dinner: potatoes and gravy, bread and butter, and at times, a milk pudding. Tea: bread and jam and tea. Before bed: a piece of bread and butter. I pointed out that the articles in this diet, though excellent in themselves, were *totally inadequate in variety*, being practically all starch, the only variety from it being the milk and the butter. This is typical of hundreds of cases, a remarkable absence of fats, proteins, vegetables and fruit, etc.

The fact that so little thyroid enlargement exists in Harrington would seem to indicate that thyroid insufficiency does not exist to any extent, otherwise one would expect to get some more frequent enlargement of the gland. If thyroid deficiency is not a marked feature, one would expect normal growth, with a better weight curve. Further, rickets and cretinism, associated with thyroid abnormality, is by no means frequent.

The combination of an abnormally low thyroid enlargement with a low weight curve is very suggestive, but are found to lead to conclusions that are highly paradoxical, and in the absence of more detailed investigation, I do not feel in a position to offer any explanation.

In the case of Bootle Rural district, however, an explanation of the higher weight curve is readily available. Here we are dealing with a typically rural district, in a mountainous district, mainly agricultural, sparsely populated, with little or no overcrowding, either of houses or persons, etc., and with less unemployment.

APPENDIX C.

TREATMENT

OF

EAR, NOSE and THROAT CASES,

with special reference to

AFTER-CARE

BY

KENNETH FRASER, M.D., F.R.S.E., D.P.H.,
Deputy School Medical Officer.

GENERAL SCHEME OF TREATMENT.

During 1928 the general scheme for the treatment of ear, nose and throat cases has been very carefully developed throughout the County of Cumberland, and measures have been taken to provide that all precautions are taken before and after operative treatment to ensure against risks attendant on operation, and to ensure that the maximum benefit results from operative treatment.

Ear, nose and throat cases may for convenience be divided into two groups.

(*a*) *Tonsils and Adenoids.*—These cases are selected for operative treatment at the Medical Inspection of the schools and at the school clinics. They are referred to the Ear, Nose and Throat Specialist at Fusehill Hospital, Carlisle, or at the Cockermouth Cottage Hospital, or to one or other of the Infirmaries and Cottage Hospitals of the County, as the case may be.

Information as to the day of admission to Hospital is not available to the Central Office in all cases, as some of the Institutions make their own arrangements, but wherever possible, as, for example, at Fusehill Hospital, arrangements are made that all cases are visited before admission by the District Nurse, or one of the Health Visitors.

Enquiries are made to see that there is no obvious reason why the operation should not be performed, to ensure that the child has not been recently in contact with Infectious Disease. The parents are instructed as to the preparation of the child for operation before admission.

The children are admitted on the morning of the day on which the operation is performed, and the instructions to the parents are that children should have a dose of Castor Oil the evening before, and, on the day of admission, no food at all after breakfast, except cups of Bovril or Oxo.

After operation the children are retained in Hospital for approximately forty-eight hours, and any special cases may be retained longer.

On discharge from Hospital, the following instructions are handed to the parents, along with a bottle of crystals of Permanganate of Potash.

INSTRUCTIONS FOR PARENTS IN THE CASE OF CHILDREN TAKEN HOME FROM HOSPITAL AFTER REMOVAL OF TONSILS AND ADENOIDS.

1.—The child should be kept in bed for at least two days after getting home.

2.—Dissolve a very few of the crystals (Permanganate of Potash)—handed to you with these instructions—in a cupful of warm water. The right strength will be a deep cherry red colour.

Encourage the child to wash out the mouth and throat with this solution frequently, especially first thing in the morning, last thing at night, and after each meal. The washing should be continued for a week after the child goes home.

3.—Keep the bowels moving regularly by giving, if necessary, compound liquorice powder.

4.—Don't give the child any food likely to scratch the throat in swallowing, for example, toast, pastry.

5.—If any pain develops in the ear, or there is any unusual discharge from the ear, or if there is any feverishness or any bleeding from the throat, you should send for your own doctor *at once*.

Steps are also taken to ensure that the cases are visited on their return home by the Health Visitors or District Nurses to ensure that the child is being properly looked after, and that the parents understand what action to take in the event of any unsatisfactory symptoms arising. The Nurse visits the cases several times in the first week whenever practicable. In outlying districts where there is no District Nurse it is sometimes impracticable to visit more than once, and accordingly steps are being considered to deal with these cases. The probable action which will be taken will be that the parents will receive printed instructions as to what symptoms to watch for, with the instruction that in the event of any of these symptoms arising, they are to call in the family doctor without delay, the County Council being responsible for his fee.

(*b*) *Ear, Nose and Throat cases other than Tonsils and Adenoids.*—All such cases, for example, discharging ears, nasal obstruction, disease of one or other sinus, laryngitis, specific or tubercular, or whatever the condition may be, are referred to the Ear, Nose and Throat Specialist, who sees these cases at his own consulting rooms.

These cases are seen in batches of perhaps half-a-dozen at a time. Following the consultation, the Ear, Nose and Throat Specialist forwards to the Central Office his full report on the clinical condition of the case, together with any recommendation for operative treatment, if necessary, or for other treatment, if operative treatment is not necessary. Cases are then admitted for operation to Fusehill Hospital on much the same lines as the tonsil and adenoid cases.

On discharge from Hospital the instructions of the Ear Specialist for the after treatment are put into operation.

The general lines of these instructions is indicated as under:—

*APPENDIX No. 34.

AFTER-CARE OF EAR, NOSE AND THROAT DEFECTS.

(To be read in conjunction with Appendix No. 22).

Dr. Dunlop, who has been appointed Ear, Nose and Throat Specialist to the County Council, has outlined lines of treatment in connection with ear, nose and throat defects other than tonsils and adenoids.

For the most part, these lines of treatment refer to after-care following, or are additional to, operative treatment, by the Ear, Nose and Throat Specialist. The line of treatment to be followed is set out by Dr. Dunlop when he sees each case in consultation. He may recommend:—

1.—An Alkaline Wash—For syringing the ear or the nose.

This may be used for chronic inflammatory conditions of the nose or ear.

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* *The heading "Appendix No. 34" means that this is an Appendix to a book bearing the name "Instructions to Nurses" which was prepared and circulated by the County Health Department to all District Nurses in the County and Health Visitors during 1928.*

In syringing the ear with this wash, the nozzle of the syringe should allow for an easy return of the lotion from the cavity of the ear.

In syringing the nose, the best type of syringe is the Higginson's Syringe. The child should have the body well bent over a bucket, and the obstructed side of the nose only should be syringed. The child taking sharp, panting breaths meanwhile. The syringing should be gently done, as there is a risk of forcing fluid into the ears if undue force is used.

The prescription is as follows:—

R.

Sod. Bic.	1 ounce.
Sod. Biborat....	1 ounce.
Sod. Chlor.	1 ounce.
Ol. Eucalypti.	1 drachm.

Sig. One teaspoonful to a pint of warm water as a wash to be used once or twice a day if there is much discharge.

2.—Nasal Oil—The prescription is:—

R.

Camphor	5 grains.
Thymol	5 grains.
Ol. Eucalypti.	5 minims.
Paraff. Liq.	1 ounce.

Sig. To be dropped into the nose with a dropper immediately after washing with Alkaline Wash.

This is also used to disinfect the nose and throat before inflation.

Treatment of Acute and Chronic Ear Disease.

In acute ear disease with pain, the use of the following prescription will relieve the pain, and will disinfect the external cavity of the ear, so that if the drum perforates there is less risk of suppuration following.

3.—Glycerine and Carbolic Drops.

R.

Glycerin Acid Carb. ...	2 drachms.
Glycerin	to 1 ounce.

Sig. Warm and pour a few drops into the ear with a dropper.

After the acute stage has subsided.

4.—Spirit and Carbolic Drops should be used.

R.

Glycerin Acid Carb.	...	2 drachms.
Surgical Spirit ...	...	to 1 ounce.

Sig. To be dropped into the ear with a dropper.

At a still later stage:—

5.—Spirit and Iodine may be used.

R.

Tincture of Iodine ...	...	5 minims.
Surgical Spirit ...	...	1 ounce.

Sig. To be dropped into the ear with a dropper.

In the case of each of these prescriptions, a few drops should be dropped into the affected ear by means of a dropper, the child lying on the sound side, and a plug of cotton wool should be placed in the ear afterwards.

It will be noted that Prescription No. 3 should be warmed before use.

In the treatment of discharging ears, the ear should be carefully dried, as indicated in Appendix No. 22. The ear should be dried *down to the drum*, cotton wool being wrapped round the end of the wooden applicators, which will be supplied, so that about $\frac{1}{4}$-in. to $\frac{1}{2}$-in. wool projects beyond the end. While the discharge is being removed in this way, the ear should be pulled up and back, and the cotton wool mop should be used with a screwing motion, and not pushed direct into the ear.

In cases of ear discharge *with eczema* round the ear, Prescription No. 5 should not be used, and in its place:—

6.—

R.

Surgical Spirit	...	1 ounce.

The reason is that for eczematous conditions of the nose and ear, the best treatment is the following ointment, which must not be used in conjunction with iodine in any form or severe blistering may result.

7.—

R.
Ung. Hydrarg Nit Dil.

In eczema of the ear it is used as follows:—

Take off the crusts with soapy water or olive oil. Clean with a swab of Methylated Spirit, and paint on the ointment. It is *most important* that *no water* should get near the affected part while under treatment under any circumstances. The part must, for example, not be washed with the rest of the face.

8.—Steam Inhalation. The prescription is:—

R.

Menthol	12 grains.
Thymol	12 grains.
Ol. Pini Abietis	1 drachm.
Ol. Eucalypti.	1 drachm.
Tinct. Benzoini Co.	to 2 ounces.

Sig. A teaspoonful in a pint of water at 170° F. for 10 minutes at bedtime.

This inhalation is extremely valuable in ear, nose and throat conditions.

The temperature of 170° F. is obtained by putting a pint of boiling water in a cold jug.

It is important that after inhalation the person concerned should not leave the house for some time.

9.—A Powder for Discharging Ears.

The prescription is:—

R.
Iodoform 5 per cent. in Boracic Powder.

It is used in certain cases of discharging ears, and is blown into the ear by means of an insufflator.

With regard to the carrying out of all these various lines of treatment, when any case occurs in the area of any Nurse, the necessary materials for treatment, which are applicable to the case on Dr. Dunlop's instructions, will be made up according to the above prescriptions.

The after-care outlined above, being somewhat elaborate, calls for a good deal of organisation in a scattered rural area.

The method of dealing with this has been as follows :— Stock supplies and the prescriptions indicated have been sent to all the school clinics in the County, together with small bottles, droppers, insufflators, applicators, etc., for handing out to individual parents.

All these bottles bear printed instructions.

In the case of areas not supplied by clinics sufficient supplies and appliances suitable to the particular case are sent to the District Nurse, who receives further instructions. So far as possible the supervision of all these cases is carried out through the medium of the Medical Officer at the School Clinic. Inflation cases are dealt with by the issue to all clinics of Politzer's Bags, and so far as possible cases attend at the clinics for inflation by this method. Cases in outlying districts are seen at the clinics, or elsewhere, and the child is instructed in the presence of the parent in the practice of self-inflation. In order that the whole matter might be rounded off, as it were, a meeting was arranged between the Ear, Nose and Throat Specialist and the Medical and Nursing Staffs of the County, when the principal lines of treatment and the reasons for these were fully gone into by the Ear Specialist, and the methods demonstrated. It is hoped shortly to arrange for a similar explanation to all District Nurses.

Following the start of the after-care period, approximately two months is allowed to elapse, and if the condition— Otorrhœa, or whatever it may be,—has not cleared up by that time arrangements are made for a further consultation between the child and the Ear Specialist.

APPENDIX D.

REPORT

OF THE

SCHOOL DENTAL OFFICER

For the Year ended 31st December, 1928.

BY

F. E. GILLIERON, L.D.S.,
School Dental Officer.

APPENDIX D.

REPORT OF THE SCHOOL DENTAL OFFICER.

I beg to submit my report for the year ending 31st December, 1928.

This year's work was carried on much as usual, 1,849 children received treatment, and 451 received re-treatment during the year, whilst some 500 children were treated, whose mouths were in such a bad state as to be interfering with their general health in some way. These cases usually require a number of extractions, fillings being out of the question owing to the advanced stage of dental decay.

As regards re-treatment, unfortunately the time which had elapsed between the two visits was so long that we found in many mouths serious dental trouble had again broken out, and progressed to such a degree as to necessitate the loss of permanent teeth. A typical example may help to illustrate the state of affairs obtaining at present owing to shortage of staff.

On visiting Penrith in 1925 a patient of six years of age is found to require two fillings in the six year old molar teeth, i.e., the large square teeth at the back of the jaws. These fillings are executed and the patient is dispatched pro. tem. as dentally fit. In 1928 a return visit is paid to Penrith, the same child comes before us, being now nine years old. The lower molars which we filled are in perfect order, but in the interval decay has appeared in the upper six year old molars, and has progressed to such an extent as to render hopeless the prospect of satisfactorily filling them. These two upper molars are removed, an apparently satisfactory solution to the difficulty, but in reality it is equivalent to the loss of four very important masticating teeth, because the soundly filled lower molars have no antagonists to meet and assist them in grinding the food to pulp.

A large number of this type of case came before us, and too many children of fourteen years leave school, under present circumstances, minus say six or seven permanent teeth. To many people this seems a very unimportant matter, but from the medical point of view it is serious.

Nature provides us with thirty-two sound teeth with which to masticate our food. Probably the majority of our population at present possess twenty, either natural teeth or

artificial substitutes. Clearly, one cannot do with twenty workmen the same amount of work that can be done with thirty-two. What is the result? The food is bolted in large pieces, and passes down to the stomach as such, instead of as a bolus of food in a perfectly pulverized state. These lumps of food irritate the walls of the stomach and cause an increased flow of the gastric juices, thus leading, in time, to hyperacidity of the stomach, a complaint which is all too common in the present day. It is the duty of all medical and dental practitioners to bring these defects strongly before their patients, and to use their endeavours towards the prevention of this trouble, rather than towards the cure. Prevention is largely a matter of the education of the population to the pitfalls awaiting neglect of these small details of our daily life. The problem is easier to tackle in the rising generation than in those who already have lost so many teeth as to be beyond our conservative efforts. The provision of artificial substitutes is the only way one can provide their grinding apparatus. The point which so many people fail to grasp is that artificial teeth are, at their best, a very inefficient means of getting over the trouble. The pressure measured in pounds per square inch which can be exerted by an upper and lower denture is not equal to half of that which can be exerted by the natural teeth, and artificial substitutes for the natural teeth are only to be regarded as a last resort to which we should have recourse when we reach the age at which our bodily tissues are becoming worn out and senile decay claims the teeth as victims.

It is frequently our duty to say to children of fourteen at present that their teeth are so hopelessly bad that they can only wait until such time as their jaws are sufficiently developed to enable the dentist to fit dentures. To sum up, the teeth of school children should be under at least constant annual supervision, until they leave school. The ideal system should provide that on reaching the age when they leave our care they come under the supervision of a dentist working on a definite panel, in just the same way as at present they pass on to the care of a doctor working under the National Health Insurance scheme.

It was in regard to these matters that Dr. Williams, of the Board of Education, visited Cumberland last summer, the subsequent development forming the subject of a special report by the School Medical Officer. It would appear that the Council are prepared to take the first step in order to remedy the under staffing by appointing an Assistant Dental

Officer to take over the outlying areas in the West of Cumberland, and so cut down time and expense wasted in travelling long distances. A definite scheme of re-visits could then be attempted, and at the same time urgent cases of sepsis could be attended to with considerably greater promptitude than at present.

It has always been our view that some definite step should be taken to ensure the education of the child and the parent by means of propaganda both in and out of school. Sufficient attention is not paid to the diet and the cleansing of the teeth. The former was very forcibly demonstrated to us in Wigton this year.

Attached to the Roman Catholic School in that town is a Convent for orphaned children. This institution is very efficiently run by the Reverend Mother and Sisters, who are to be congratulated on the results of their labours. The children are always extremely tidy and well-cared for in their appearance. Their faces betoken a healthy and happy regime, and they appear considerably more healthy than a large number of day children in the same school. It is with regard to dental matters that they come under our notice here. In the 1921 Annual Report it was observed that the Dental Officer could pick out these children from the day scholars as they passed before him, solely on account of their sound and hygienic mouths. In 1921 50 per cent. of the children required no treatment, the remainder requiring only 1.8 extractions per head. Even these teeth extracted showed marked signs of decay having been arrested owing to the child being in more healthy surroundings than formerly. The children clean their teeth twice a week only, but the diet was highly satisfactory, being of a more fibrous nature than was usually given to the school child. It was found to consist of meat, bread and crusts, fish, eggs, soup, etc. The daily feeding of the child with bread and butter and bread and jam is not in evidence here. In 1928 the same satisfactory conditions obtained at the School Inspection.

Out of twenty children examined only five required treatment, and even these children were found to require only treatment of a very minor character.

Clearly, regular healthy habits, such as plenty of sleep, coupled with a healthy diet, have a marked effect on the teeth. Sweets are hardly ever given, and fruit, on account

of the expense, does not enter very highly into the dietary. All the mouths were hygienic, in spite of minor defects. It would appear that a plain and simple mixed diet, coupled with reasonably regular habits of health, should be the aim of everyone who wishes to have his body at the maximum of efficiency.

It is a well known fact that the teeth of the upper classes in our community, who live on a mixed dietary, are in far better condition than those of the artisan and middle classes in whose menu bread and butter and the sugars play such a large part.

During the course of the year treatment has been provided in the following towns:—Whitehaven, Cockermouth, Maryport, Penrith, Thursby, and Wigton.

Owing to distress in most of these towns fees have been more difficult to collect, and the financial yield has been less than in former years. The recommendation with regard to fees in the 1927 Report might be worth serious consideration by the Committee in this connection.

In conclusion, it is necessary to mention that the time has arrived for the drawing up of a very definite scheme for the improvement of the apparatus at our disposal. At present we have only two portable chairs of a very primitive type. They are **incapable of any form of adjustment to suit the patient and operator's convenience,** and have often been the object of very scathing remarks by the visiting Inspector from the Ministry and also from visiting Dental Officers from neighbouring counties.

It is quite impossible to do good fillings with them, and they confine us to filling work of the very simplest and easiest types. Fillings in other than front teeth, or in older and taller children, are quite impracticable. The work is needlessly hampered thereby, and now that the Board are insisting on conservative dentistry, these chair will have to be largely superseded. The adjustable chairs are not portable, and, therefore, there should be a permanent chair in every clinic in Cumberland. It is suggested that two chairs per annum be purchased and placed in the permanent medical clinics, until we have a suitable chair in every one of these.

Thanks are due to all school teachers who have been, as usual, very helpful. The Head Teacher of the National School, Maryport, requires special mention in this connection. His energy and zeal with regard to dental matters are extraordinary, and his large school has responded to our efforts exceedingly well, owing to his meticulous attention to all details. Many parents will have cause to thank him in later life for his foresight in these matters.

F. E. GILLIERON,

School Dental Officer.

JOINT REPORT

BY THE

SCHOOL MEDICAL OFFICER

AND THE

SCHOOL DENTAL OFFICER

ON

A complete Dental Scheme, in accordance with instructions contained in Minute 211, Page 427 of the Printed Minutes.

Before deciding on a remedy for any disease it is necessary, if success is to be achieved, to know, at any rate, something of the causes which produce that disease.

If this be true, in order to cure a disease, it is certainly correct to state that a disease cannot be prevented until the causes are definitely known.

Before, therefore, submitting a scheme for the dental treatment of school children, we propose to tell you something as to the causes which make such a scheme necessary.

It cannot, we think, be disputed that teeth throughout the country, and Cumberland is no exception, are definitely worse than they were say a hundred years ago.

It has been stated that at the present time something like 95 per cent. of the teeth in this country are carious.

If we remember that in the native races of India, China, Africa and America the average of carious teeth is about 5 per cent. and that among the Maoris of New Zealand only about 1 per cent. of the teeth are carious, we must come to the conclusion that dental caries is a disease due to so-called civilisation.

That this is so is further indicated by the fact that dental caries is almost, if not quite, unknown in wild animals, whilst it is quite common in domesticated animals and those living in captivity. Does not this give a clear indication along which line preventive measures must proceed?

If it be remembered that prior to birth the infant has, embedded in its jaws the seeds of two sets of teeth, surely it is reasonable to suppose that these seeds cannot grow into what should be the hardest and most disease resisting part of the body, unless provided with sufficient and suitable nourishment, and that unless so provided caries must follow sooner or later.

The present diet of a large number of families provides neither sufficient nor suitable nourishment.

But in considering sufficiency we must think more of the constituent elements of diet than of quantity. There are many people who consider that anyone receiving sufficient food to satisfy the craving of hunger is getting a sufficiency of food, irrespective of what that food is composed of.

The relation that diet bears to the teeth and the general nutrition is, therefore, of the utmost importance.

Generally speaking dental caries is due to a number of causes, which may work separately, but more frequently in combination.

Chief of these are:—

(a) Food which does not cleanse the teeth sufficiently.

(b) Too much soft, sticky food adhering to the teeth and fermenting with the formation of acid, destroying the enamel.

(c) Want of sufficient mineral salts, particularly calcium (lime).

(d) Lack of essentials in the mother's diet, before the infant is born.

Attention to the expectant mother before the birth of her child and attention to the feeding of children from birth till six and seven years of age would go a long way to prevent dental caries.

Till, however, the general public can be taught to realise these facts, preventive treatment, i.e., treatment to prevent bad becoming worse, will have to take the place of real prevention.

The vast proportion of children, if left alone, will not visit a dentist until compelled to do so by severe toothache, but a School Dental Officer is in a much more favourable position as regards treatment than a private practitioner. Whereas the latter has to wait until patients come to him for treatment, the former has the advantage of being able to inspect large numbers of children, and to select those who require treatment either as a radical measure or as a conservative one.

With him it is not only a question of extracting or filling according to the immediate requirements of the case, but is a far reaching method of preventive medicine.

The whole object of a scheme is to ensure the detection of dental disease in its earliest stages, before it becomes apparent to the layman, or even to the individual whose teeth are in question, and to treat these defects whilst conservative operations are still possible, just as the object of School Medical Inspection is to detect the earliest signs of an oncoming disease and to apply such preventive measures as are available.

Dental caries is, of course, a bacterial disease. Bacteria found in a clean mouth are practically harmless, whereas those found in a dirty mouth soon become dangerous. When the soft tissues of the mouth are in a normal condition they are practically impervious to bacterial life, but when the gums become inflamed, as they invariably do when dental caries is present, they become open gateways for the entrance of disease germs into the circulatory system of the body. Whilst not prepared to state that dental disease is the causative agent of all diseases ranging from Tonsils and Adenoids to Cancer, it cannot be disputed that it is the cause of much misery and ill-health.

The aims and objects of school dentistry are essentially preventive rather than curative. A complete scheme aims at the preservation in good condition of the permanent teeth, as well as such palliative treatment to such of the temporary teeth as do not require to be extracted.

For convenience the duties of a School Dental Officer may be divided into:—

(a) Inspection.

(b) Treatment.

Is Inspection necessary?

Opinions differ as to this. In our opinion if the object is to provide merely for the extraction of obviously decayed and septic or " unsaveable " teeth, then inspection, other than can be given at the routine medical inspection by the School Medical Officers, is unnecessary, but if the ideal dental scheme is to be aimed at and conservative dentistry is

to be our objective, then inspection must be carried out by a skilled Dental Officer with mirror and probe, in order that the earliest signs of dental caries may be discovered, so as to prevent septic mouths and " unsaveable " teeth.

Treatment.

The aim of treatment should be to secure that as many children as possible shall leave school free from dental caries and trained in the care of their teeth. To be thoroughly efficacious, care of the teeth cannot start too soon.

Early treatment, if followed by frequent re-inspection, is a preventive measure of the first importance, and is economical in the long run.

It is a fatal mistake to suppose that the condition of the temporary teeth does not matter because, as the temporary teeth are, so will the permanent ones be, and so it is a great mistake to neglect the teeth of the younger children in the infants' departments; their teeth frequently need attention, and apart from temporary defects, the interest of the developing teeth of permanent set must be considered.

The tooth germs of the permanent set being present in the jaws at birth, they grow and develop for years hidden away in cavities in the bones of the jaws, among the roots of the temporary set. It is easy to see, therefore, why any disease of the latter, especially gum-boils, will interfere with the proper growth of the former, and why they being from the first defective and growing in unhealthy soil are unable to withstand the attacks of disease.

If a dental scheme is to be effective, then inspection and treatment should begin at the earliest practicable age, certainly before the sixth year, because it is at, or about, this age that the first permanent teeth make their appearance.

These first permanent teeth are so important that they have been called the " Keystone of the Dental Arch."

These teeth are the largest of all the molars and are very important in keeping the jaw and arches for the teeth in proper shape. They should, therefore, receive special care and attention.

It would be well if all parents could be taught about this first permanent molar:—

1.—That it is the first of the permanent set to appear.

2.—It is the sixth tooth from the centre of the face.

3.—It displaces no temporary or baby tooth.

4.—It appears about the sixth year of age, just behind the second baby molar.

5.—Once lost it can never be replaced by another tooth.

6.—And once it is gone the one opposing it will certainly go too, from want of use.

In the words of Sir George Newman:—" The ultimate purpose of a dental scheme is to secure for children, by the time they leave school, *an efficient and sound set of permanent teeth.*"

" It would appear that there is only one way to reach this desirable condition, and that is to begin the dental care of a child as soon as, or before, the first permanent tooth erupts, and to keep him under yearly observation and treatment for the rest of his school life. This can only be accomplished if due attention is given to the two main forms of dental treatment, namely: (a) the removal of unsaveable teeth, where these are harmful, and (b) the preservation of all saveable permanent teeth. Any scheme of treatment which does not fulfil both these conditions is failing of its purpose."

As regards treatment, the conditions of a satisfactory scheme are laid down in the Annual Report of the Chief Medical Officer of the Board of Education for the year 1923, and the principle of this scheme is as follows:—

Attention should be concentrated in the first instance on the group of children from five to seven years of age. This is essential for the following reasons:—

(a) To anticipate and prevent the encroachment of dental caries it is advisable to inspect the children at as early an age as possible.

(b) To begin early is to enhance the chances of saving teeth.

(c) To inspect and treat early is to make adequate preparation for the " critical age," which is, of course, the time of emergence of the permanent teeth.

The first year's work then, under this scheme, would comprise the inspection, and where necessary, the treatment of a certain number of children, under seven years of age. The second year's work would commence with the re-inspection, and the re-treatment of all the children inspected and treated during the previous year, and in addition, all the new entrants admitted to the schools would be inspected and those requiring treatment would get it, in subsequent years all those already inspected and treated, would be re-inspected and re-treated, and an additional group of entrants would come under inspection and treated each year, until the whole of the children were dealt with in the schools.

Thus, in the course of eight or nine years, we would ensure that every child on reaching the age for leaving school would have the chance of doing so with a perfectly sound set of teeth, which is the objective for which we are aiming.

This, in our opinion is a very sound scheme for dealing with children in a more or less circumscribed area, such as a County Borough or a large Borough or Urban District, where all the children are within easy reach of a dental clinic, or in which the dental officer's apparatus, chair, etc., has not to be moved any great distance between one school and another, and above all, where there is no difficulty in selecting children in the various age groups for inspection and treatment in sufficient numbers to keep the dental staff fully occupied in any given year.

How would this scheme work in such an area as Cumberland where, in the whole area of 1,513¼ square miles, we only have an elementary school population of 26,000, but under seven years of age of 5,600? Even if we include (to be inspected and treated in the first year) all children under eight years of age we then have 8,845 children to deal with. A sufficient number to employ the full time of two dentists, but the amount of time taken, as well as the expenditure involved, in travelling to cover this work is going to be out

of all proportion to the amount of treatment given, even if it be granted that two dentists could undertake to treat this number of children over such a widely scattered area.

Even if we admit that this amount of work could be done during the first year by two dentists; in the second year, when to this number has to be added the 2,500 entrants, to be inspected and treated as well as the previous year's numbers to be re-inspected and re-treated, it would obviously be out of the question for two dentists to do it, and unless it were done, and done thoroughly, much of the previous year's work would be wasted.

As an alternative to this method of selecting an age group for the first year, and adding the entrants each year as an additional group, we suggest that the County be divided into smaller areas, of a size in which one dental officer could in the first year inspect and treat the whole of the school population in that area. In the second year he would re-inspect and re-treat the previous year's numbers, and in addition inspect and treat the entrants in that area.

The total number to be dealt with in any given year would not greatly exceed his original number, because the number of new cases, the entrants, would be offset by the number of children who leave school in any given year.

A further probable advantage would be that children—or the parents for them—who refused treatment in one year, would have the offer of it again the following and subsequent years, when in all probability they would be glad to accept it.

The scheme, therefore, which we suggest for your consideration, is as follows:—

1.—That an area embracing an elementary school population of 4,000 to 5,000 be selected, and that the whole of the children in that area be inspected, and those requiring treatment should receive it in the first year. In all probability 4,000 will be a sufficient number to commence with, but should it be found to be insufficient one, two or three more schools could easily be added.

2.—If it is found possible to fall in with the recommendation of your Committee (that a second dentist be appointed forthwith) that a second similar area be selected, and that it be dealt with in the same way.

3.—As time goes on, and as available money permits, that other dentists be appointed to similar areas, until the whole County is covered. This in time would mean the appointment of five or possible six dental officers.

4.—Each additional dentist would mean an expenditure of from £810 to £860, made up as follows:—

Dentist's salary	£450—£500
Dentist's travelling and subsistence..	£100
Nurse's salary	£160
Nurse's travelling and subsistence ...	£50
Equipment and supplies	£50

and in addition there will be an initial expense of about £100 for equipment for each full time man.

5.—It is reasonable to suppose that as all children are treated or re-treated every year from the time of their entering school until they leave, that after a few years treatment the numbers requiring re-treatment will gradually diminish, then will be the time for the Education Committee to negotiate with the Health Committee in order that arrangements may be made to provide dental treatment for expectant mothers and sufferers from tuberculosis.

6.—We cannot agree that any scheme which takes no cognisance of toothache, gum-boils and the appallingly septic months that are so frequently seen in some of the schools is a complete scheme, and although radical treatment may not have any educative value, *per se* it has an educative value in the fact that it enables children who have bad teeth extracted for toothache, etc., to attend school in comparative comfort, and to benefit by the education received, which they certainly could not do whilst in acute pain. It is the considered opinion of all the School Medical Staff that many children suffer materially in health as a direct effect of the foul condition of their mouths, and that any treatment directed to improve their health is, and must remain, ineffective so long as their mouths do not receive adequate attention.

7.—We suggest, therefore, that a certain amount of time be given by the dental staff to treatment of these cases (selected by the School Medical Officers) either at the various clinics or in the dental van.

This could be done either by the dental staff giving up one or two sessions a week for such work, or by making arrangements for the children to come to the clinics during the shorter school holidays.

8.—There are two additional points to mention: (a) how best to make provision for the treatment of dental defects of children in the Secondary Schools. Whatever else is done, we suggest that provision be made for attending to, at least, the worst cases selected by the School Medical Officers at their inspections; (b) owing to their geographical position it will be exceedingly difficult to bring into any scheme by whole-time dental officers, without great expense in travelling, the two outlying districts of Millom and Alston; we suggest, therefore, that it might be a cheaper method to employ part-time dentists to attend to both the Elementary and the Secondary school children at these two places.

(Signed)

F. H. MORISON,

School Medical Officer.

F. E. GILLLIERON,

School Dental Officer.

APPENDICES E. and F.

REPORTS

ON

PHYSICAL TRAINING

For the Year ended 31st December. 1928.

APPENDIX E.

REPORT ON PHYSICAL TRAINING FOR THE YEAR ENDING DECEMBER 31st, 1928, BY MISS MARGARET FRASER, CHIEF (WOMAN) ORGANISER.

Physical Training in Cumberland continues to make good progress, owing to the enthusiastic co-operation of the Teachers, whose keenness was often put successfully to the test during the wet season.

In many of the Rural Schools, where the Team System has been introduced, a marked improvement is shown.

Staff.

I am glad to report that no changes have occurred in the personnel or duties of the Staff during the year.

Teachers' Classes.

Centre.	*Subject.*	*No. on Roll.*	*Teacher.*
Keswick ...	Organised Games ...	22	Miss N. Hall.
Penrith ...	Organised Games ...	42	Miss N. Hall.
Carlisle ...	Organised Games ...	42	Miss M. Fraser.
Carlisle ...	Organised Games ...	34	Miss M. Fraser.
Millom ...	Physical Ex. ...	36	Miss M. Ostle.
Maryport ...	Organised Games ...	45	Miss M. Ostle.

The Organised Games' Courses were especially arranged on account of the Games' Syllabus, which was drawn up by the Organisers, and issued to all the Schools at the beginning of May, with the object of getting better progression in the preparatory work, and a more uniform standard throughout the County.

The interest and enthusiasm shown by the excellent attendance at these classes was most encouraging. It was intended to hold only one class in Carlisle, but on the first night seventy-six teachers were present, so it was decided to form two classes.

Evening Continuation Classes.

There has been a marked increase this year in the number of Continuation Classes for girls. Successful Physical Training Classes are being held at Penrith, Keswick, Cockermouth, Dearham, Longtown, Broughton Moor, Whitehaven, Aspatria, and next year it is hoped to arrange a Special Course for Teachers who intend to take up this work. Demands for Folk Dancing Classes have come from Ireby, Gosforth, Portinscale, Bromfield, Bowness-on-Solway, Abbey Town, Melmerby, Lazonby, Aikton, Bassenthwaite, Blennerhasset, etc., all of which have been arranged, and judging by the numbers in attendance, are highly appreciated.

Accommodation.

The urgent need for covered sheds in the Playgrounds has been demonstrated over and over again during the past very wet season.

Playing Fields.

The number of Playing Fields is still increasing, over 50 per cent. of the Schools now have Fields, but in a County like Cumberland, no School should be without a suitable space for Organised Games.

Organised Games.

Net-ball is quite the most popular of the Organised Games, and is played with enthusiasm in every district in the County. The standard of play has greatly improved, and some really good matches have taken place. Thanks are due to the Teachers, who have given their spare time to coaching the teams, and umpiring matches. There are seven Net-ball Leagues in the County, the winners of which play off for the Championship of Cumberland.

District Net-ball Leagues.

District.	*Winning School.*
1. Carlisle Rural District ...	Hallbankgate.
2. Penrith Rural District ...	Renwick.
3. Whitehaven Rural District..	Arlecdon.
4. Maryport	Maryport Council School.
5. Keswick	Crosthwaite Girls'.
6. Cockermouth	Clifton.
7. Aspatria	Westnewton.

Inter-League Net-ball Matches.

First Round.

Schools.	*Where played.*	*Winning School.*
Hallbankgate v. Renwick	Kingstown ...	Hallbankgate.
Maryport C. v. Westnewton	Allonby ...	Westnewton.
Arlecdon v. Clifton ...	Parton ...	Arlecdon.

Crosthwate Girls'—Bye.

Semi-Finals.

Hallbankgate v. Crosthwaite Girls'	Penrith ...	Hallbankgate.
Arlecdon v. Westnewton ...	Cockermouth	Westnewton.

Final.

Hallbankgate v. Westnewton	Carlisle ...	Westnewton.

The Final Match was played on the Carlisle Rugby Club Ground, kindly lent for the occasion. After a keen struggle, Westnewton School became the champions for the second time in succession.

Sports.

The number of Schools holding Sports of their own has very greatly increased, and it is impossible to enumerate them all.

The Annual Combined Sports, held at Keswick, and at Cockermouth, were conducted as usual, well organised, and carried through successfully.

Maryport Schools' Annual Sports were again held in Netherhall Park, on July 4th. Maryport Council School gained the highest number of points, and so hold the shield for the year. A popular item at these Sports was the Country Dancing on the lawn by a number of girls from the different schools, coached by Miss D. Benson and Miss A. Robinson.

Aspatria Sports.

Great credit is due to the Teachers at Aspatria, who were responsible for the excellent spirit shown by all competitors at their Annual Sports in July. An unusual feature was the introduction of " Team " and colours in the Infant School, where the little people competed for " Points " as keenly as their elder brothers and sisters.

Inter-School Sports at Burgh.

On July 13th a most successful Sports gathering was held at Burgh, where children from Bowness-on-Solway, Burgh, Kirkandrews, Kirkbampton, and Great Orton Schools competed for a shield, presented by Mr. Osborne. Points were awarded for the various events, and the friendly sporting spirit shown by all competitors was a pleasure to witness.

Flimby Sports.

The Girls', Boys' and Infants' Departments at Flimby School combined to hold a Field Day, which had to be twice postponed on account of the weather. It was eventually held on July 13th, and reflected great credit to all concerned.

Swimming.

The Swimming in Wigton is keeping up the tradition, and there are several promising young swimmers. Enthusiasm at the National School was increased by the efforts of Miss Briggs, who not only conducted the girls to the Baths, but went into the water and helped them considerably.

Miss Hall reported that Culgaith made full use of their excellent Bath, and that the children at Loweswater School had advanced sufficiently to go to Crummoch Water.

It is hoped that other Schools, which have easy access to either lakes or sea, will try to organise swimming for their pupils.

Folk Dancing.

The popularity of Folk Dancing is still increasing in Cumberland, and many requests for classes have come from outlying districts.

A Folk Dancing Competition for school children was held at the Millom Musical Festival, at the beginning of December, and a mixed team of girls and boys from Eskdale High School won the first prize.

The English Folk Dance Society have arranged to hold a Vacation Course during Easter week, at Keswick, so Cumberland Teachers will have a good opportunity to try for certificates.

Secondary Schools.

The excellent work being done in Whitehaven, Keswick, and the Thomlinson Girls' School, was demonstrated by the Inter-Form Competitions, which were held during the year. Miss Wisnom reports that the number of children attending the Thomlinson Girls' School has increased, so that there is now an additional Gymnastic Class in the afternoon.

Visit of Miss Perry (His Majesty's Inspector).

Miss Perry visited the County in March and June, inspecting the work in the Secondary Schools and Teachers' Classes, and some of the Elementary Schools.

MARGARET FRASER,
Chief (Woman) Organiser.

APPENDIX F.

REPORT OF THE CHIEF (MAN) ORGANISER OF PHYSICAL TRAINING

(Mr. W. S. Gray).

Increasing interest is being taken in all phases of Physical Education. Whenever the subject is treated as of having vital importance to the health and well-being of a child, and not merely as another subject on the time table, one perceives at each visit an air of joyous anticipation on the part of the children.

Formal work is being made more interesting, and teachers are learning to adapt their exercises to the conditions. At the same time there is need for a better sense of rhythm; a need which is the outcome of many teachers always counting for the class instead of allowing the children to count for themselves.

The Committee's system of giving aid towards the provision of equipment for games, as distinct from making entire provision for equipment, has a healthy moral effect on school organisation, and has in many cases led to the inauguration of a Sports' Fund.

Staff.

After seven years excellent service, Mr. Smith left us at the end of August to take up an appointment with the Manchester Education Authority. Mr. Iceton has taken over Mr. Smith's duties and Mr. Tringham, of Farnworth, Lancashire, took over Mr. Iceton's work, on the 16th of October.

Playing Fields.

In addition to the 130 schools already possessing Playing Fields, another eight have been added this year, namely: Cleator Council and St. Mary's; Crosby (Crosscannonby), Sandwith, Mungrisdale, Irton, Kirkbampton and Haverigg Schools.

Organised Games.

The typewritten Scheme of Games, with descriptions and diagrams, sent out in the month of May, has been much appreciated by the teachers. In fact there has been many requests for more copies. It is to be hoped that the scheme

will not find a resting place in the teachers' desk or school library, but that it will be constantly in use. I feel sure that it will prove a reliable guide for the teachers, and will enable them to make the best possible use of the games period.

Demonstrations.

Speech Day was held at Cleator Council School on the 6th of June, and forty of the Senior Boys gave a clever and interesting Display of Physical Training and Games to a large gathering of parents and friends. At Aspatria School Sports neat exhibitions of Physical Training and Games were introduced, and were very popular; while at Flimby variety was added to the programme by the introduction of Team Games and Free Standing Movements. Moor Row Council School held their Annual and popular Demonstration of Physical activities on Tuesday, 17th July. Parents' Day was held on Thursday, the 19th of July, at Thornhill Council School, when a varied programme was successfully carried through. The most popular item, which was much appreciated by a large gathering, being the "Daily lesson" in Physical Training. At Grasslot Council School, on Friday, 14th December, parents and friends were invited to a delightful school concert, where due prominence was given to a nice display of Physical Training and Games.

Cricket.

In Keswick the boys of the Elementary Schools take part in a most healthy Cricket League, Brigham and Crosthwaite sharing the honours at the head. At Millom a teacher is on duty at the School Playing Field four evenings per week from 5-30 to 7-30 during the summer session to coach the boys in Cricket; every male teacher in the Elementary Schools taking his turn of duty.

Swimming.

At Wigton the following number of Children attended the baths during the summer months:—

School.	*Boys.*	*Girls.*
Wigton National	49 ...	60
Wigton Roman Catholic ...	29 ...	22

Boys from eight of our schools in the Whitehaven district (160 in all) attended the baths for one half-hour per week from 12th May to the end of September, and the result was

more than satisfactory. At the beginning of the course only twelve of the 160 boys could get across the bath, but at the end of September 120 or 70 per cent. of the boys could swim.

Cleator Open-Air Swimming Pool.

There are various parts of the river Ehen, in the near vicinity of the Cleator Schools, which could be converted into splendid open-air swimming pools. The water is plentiful and very clean, and if a shelter for undressing was erected, and the bottom of the selected part of the river levelled up, it could be used without any risk or danger for bathing. A pool of this kind would be a great boon to the youth of the district.

Cumberland Schools Football Association.

In the Cricket Field, Whitehaven, on Friday, 30th March, St. Patrick's Boys, Cleator Moor, won the County Shield; Penrith Boys' Council being "runners-up." The Council School, Lowca, for the second time in succession, won the Derwent School League Championship, and the Lonsdale Cup, which is competed for by Carlisle, Workington and Whitehaven Schools. At Keswick, Brigham won the Spedding Cup, Crosthwaite securing the Holmes Shield. In Millom the Secondary School boys join in the competitions with the Elementary School boys. The "Soccer" League was won by the Secondary School, with Haverigg as "runners-up," while Lapstone Road Boys won both the Rugby Union and Rugby League Competitions.

Sports.

The following schools organised Sports Days:—

School or Schools.	*Date.*	*No. of Competitors.*
Thursby	June 20 ...	70
Torpenbow	June 29 ...	50
Keswick Schools	July 4 ...	650
Maryport Schools	July 4 ...	800
Cockermouth Schools ...	July 5 ...	700
Hallbankgate Schools ...	July 7 ...	150
Longtown	July 11 ...	250
Flimby Schools	July 13 ...	300
Burgh Schools	July 13 ...	300
Gilcrux	July 13 ...	60
Aspatria Schools	July 16 ...	400
Distington	July 17 ...	150
Beckermet	July 18 ...	110
Gosforth	July 20 ...	100

School or Schools.	*Date.*	*No. of Competitors.*
Caldbeck Schools	July 20 ...	80
Blackford	July 20 ...	80
Harrington Schools	July 20 ...	300
Raughton Head	July 21 ...	70
Brampton Boys'	Aug. 30 ...	100
Bassenthwaite	Aug. 31 ...	70
Little Clifton Schools ...	Sept. 10 ...	200

The objects of these Sports are:—

(1) To inculcate the true sportmanlike spirit.

(2) To improve the general physique and moral well-being of the children.

(3) To foster a keen and honourable rivalry.

(4) To bring managers, parents, officials, teachers and scholars into more intimate touch.

Cumberland and Westmorland Wrestling.

The Third Annual Schoolboys Wrestling Competition for the Hugh Watson Challenge Shield took place at Braystones, Beckermet, on Saturday, 26th May. The following Schools entered teams of five boys: Waberthwaite, Beckermet, Seaton, Montreal, Bookwell, Borrowdale, Crosthwaite, Calderbridge, Gosforth, and Cleator. The competitors were not so numerous this year, but the wrestling was of a very high standard. Waberthwaite was first with nineteen points, and Seaton Camerton second with eighteen points. Mr. Musgrave, of Whitehaven, presented the Shield and small Cups to Waberthwaite, and "runners-up" Medals to Seaton Camerton.

Secondary Schools.

Whitehaven.—The County Secondary School held their Physical Training Competition on Thursday, 8th March, and after a very keen contest, Form VI. gained first place. As usual, the work was of a high standard, and the neat and clean appearance of the boys deserves special commendation.

Wigton.—The new gymnasium is proving a great acquisition to Nelson School, and one hopes that in the near future similar buildings will be erected at Whitehaven and Brampton Secondary Schools. Mr. Dazeley has kindly given the Wigton Young Men's Evening Class the use of the new gymnasium, and the attendance and enthusiasm shown by this class emphasises how much they appreciate it.

Evening Continuation Classes.

	On Roll.	*Teacher.*
Maryport	34 ...	Mr. Smith.
Aspatria	25 ...	Mr. Hewitson.
Moor Row	19 ...	Mr. Hayes.
Flimby	12 ...	Mr. Warburton.
Broughton Moor ...	35 ...	Mr. Griffiths.
Keswick	25 ...	Mr. Tringham.
Penrith	35 ...	Mr. Hargreaves.
Dearham	27 ...	Mr. Dobson.
Longtown (Junior) ...	28 ...	Mr. Wilkinson.
Longtown (Senior) ...	28 ...	Mr. Wilkinson.
Wigton	28 ...	Mr. Hartley.
Harrington	23 ...	Mr. Hartley.

To terminate the course in March the Aspatria class gave an excellent demonstration in the Drill Hall before a large and enthusiastic audience. This class is the centre of many activities, including a Rugby Team, Concert Party, and a Week-end Camping Section. New classes have been formed at Longtown (2), Flimby, Maryport, Keswick, and Broughton Moor. The teachers are not so backward as they used to be in "tackling" these classes; one can understand their timidity in the past, when one realises that it requires a great deal of initiative and enthusiasm to keep these classes going when there is insufficient accommodation and little apparatus.

Teachers' Classes for Men Teachers.

The following classes were held this year:—

	On Roll.	*Teacher.*
Carlisle	30 ...	Mr. W. S. Gray.
Whitehaven	41 ...	Mr. W. S. Gray.
Keswick	10 ...	Mr. J. J. Iceton.

Short refresher courses were held at the above centres, and as the numbers prove were well attended. Most of the work, which was based on the Board's Syllabus and the County Scheme of Games, was done in the playgrounds; keenness in the competitive sections and general enthusiasm were marked features.

W. S. GRAY,

Chief (Man) Organiser.

APPENDIX G.

WHITEHAVEN COUNTY SECONDARY SCHOOL.

REPORT FOR 1928.

[To the Governors of the Whitehaven County Secondary School].

LADIES AND GENTLEMEN,

During the year 1928 I have made 106 First Examinations, i.e., examinations of new pupils, sixty-three being boys and forty-three girls. I have also re-examined 274 pupils, of whom 142 were boys and 132 girls.

First Examinations.—Just over one-third (namely, thirty-seven) of the 106 are passed as perfectly normal. Even amongst these there may be some who have defects, as it is impossible to note every defect in what must, of necessity, be a somewhat superficial medical examination, e.g., it is quite impossible without a special mirror, etc., to detect every decayed tooth. This percentage may, however, be taken as fairly accurate, and shows a better percentage of normals than last year, which was twenty-six out of ninety-four.

Teeth, as before, are the most popular defects. I have marked no fewer than forty-five pupils who need some dental treatment. Only two of these forty-five had, apparently, previously had any treatment, though eight others had had treatment before entering school, and their teeth were apparently quite good. No fewer than twenty-three others I noted as having good teeth, and seemingly they had not had, and did not need, the dentist. This is a distinct improvement on what is found at most school clinics, and may probably be accounted for by the fact that they had been seen by the school dentist when they attended elementary schools.

Tonsils and Adenoids.—Forty-five pupils suffered from defects in the way of tonsils and adenoids. This covers, so far as possible, every case of abnormal tonsil, whether the trouble be enlargement, slight or otherwise, or simply an apparently unhealthy tonsil without enlargement. I have tried also to get histories from the pupils as to whether they show any symptoms to suggest the need for operation.

Only fourteen of the forty-five gave a history of suffering from sore throat, special tendency to cold, deafness, etc. The remaining thirty-one included all tonsils showing even slight enlargement. This information will be found useful when re-examining these new pupils in after years.

I could only find four cases where the tonsils had been removed before entering school.

General Physical Development.—There were thirty-two pupils classed under this heading. I consider this one of the most useful conditions to be noted when the pupil enters school. It is most interesting to watch their development as they get on in their school life. There can be no doubt but that the physical training and games under supervision are most beneficial to the pupils.

Eyes.—Twenty-one pupils suffer in some way or other from eye trouble, fifteen of them being defects of vision. Several of these pupils already wear spectacles, but quite a number had no idea they needed glasses. They have been advised of their defect, and will, I am sure, find comfort and help by getting spectacles to suit their sight. One boy had a marked squint. With proper spectacles I trust this squint may be corrected. There were four cases of inflammation of the lids of the eye (blepharitis), and one pupil suffers from a more or less chronic conjunctivitis.

Lungs.—Three pupils were noted having what might be considered "weak chests"—one was thin, slight and delicate, with an old tubercular history. She is, however, quite well now, and will be kept under careful observation. The other two will also, of course, be periodically examined. I do not anticipate trouble in any of the cases.

Heart.—There were five cases of heart troubles, only one of which was organic. Three of the others were due to strain, and will be watched, with a view to their not overdoing games and physical exercises, etc. The fifth case is an abnormally "nervous" heart—time and development and care will overcome this.

Goitre.—Only one case of Goitre was noted, and this was only slight.

No case of infectious or contagious skin trouble was noted—a slight eczema of the chin and very slight scurvy of faces were all the skin affections noted.

Miscellaneous.—Five cases of anæmia (four boys) were noted. Three cases of stammering. One child is said to have had a fit, which might be epileptic. Four pupils (two boys and two girls) were decidedly too adipose for children of their age. Two pupils have had an appendix operation performed—there may have been others. One girl has had a mastoid operation performed, and can now hear any watch ticking—left ear at 18 inches, right ear at 6 inches. One girl shews the scar of gland abscesses of neck—probably old tubercular glands.

I have noted one pupil as being "delicate" and will keep her under careful observation, and report to her parents if medical attention is necessary. It is impossible to ascertain with any accuracy what infectious disease the new pupils have had, but I came across quite a number who had had rheumatic fever and also pneumonia. One pupil was said to be a "bleeder," and for this reason had not had her tonsils removed. This point will have to be particularly noted so that if she has any accident the fact may be taken into consideration in treatment.

Re-examinations.—These number 274 of whom 142 are boys and 132 girls. I am exceedingly glad to note that no less than 125 of these 274 are marked as normal. It is satisfactory to note that there has been a steadily increasing number of "normals" amongst the re-examination cases for many years now, the last three years having been particularly good. As in former years I have not allowed defective teeth to affect this statistic.

I feel myself that this good result is due, to a great extent, to the physical training and encouragement in games, which is fostered in this school. It certainly makes for the physical development and good health of the young growing pupil. At the same time, I quite agree that physical exercise and games should be under supervision. This annual examination of the pupils minimises any risk of games, etc., being overdone.

Teeth.—As in former years the number of pupils who suffer from some defect or other with regard to teeth is very high indeed. At the same time, it is somewhat gratifying to

find that no less than fifty-four have had, so far as one can see, thorough attention, and sixty-five have also had attention, but still need more. This seems to show that considerably more attention is being paid to the teeth among children than used to be the case a few years ago. Very possibly this is, to a great extent, due to their receiving attention at the Elementary Schools before entering the Secondary School. At the same time, I found no fewer than ninety-six pupils who needed treatment by the dentist, who apparently had not previously received any attention whatever.

There can be no doubt that bad teeth very much affect the health and working ability of anybody, young or old. These figures will show, therefore, the necessity for some strictness in seeing that the teeth have supervision and attendance. In addition to the above statistics it is to be noted that three pupils suffered from pyorrhœa, one from "bleeding gums," and that two actually wear artificial dentures—school age seems very young for this to be necessary.

Tonsils and Adenoids.—As usual this is the category (excluding teeth) which gives the highest figures—eighty-one pupils suffer from enlarged or unhealthy tonsils. Many of these, of course, are very slight, and need no surgical interference. Fifty-one of these do not, apparently, handicap the pupil in any way. On the other hand, thirty inform me that they are subject to sore throats or colds, or have, obviously, unhealthy tonsils. These thirty would seem to need surgical treatment. They have, in any case, had this condition referred to their parents. I shall endeavour to follow these cases up and see whether they are referred to their family doctor or not.

Eyes.—Only three cases of external eye abnormalities were noted—one of blepharitis, one case of meibomian cyst, and one of internal squint. One pupil was found to be totally blind in one eye—in addition she had not very good sight in the other eye. It has, however, been attended to, and spectacles are, I understand, being worn. There were forty-seven pupils who wear, or ought to wear, spectacles. The objection to wearing "glasses" does not seem to be so apparent as it used to be. I found, however, several pupils who had "left their spectacles at home."

This is a class of defect that needs continual supervision, as I have found several cases where the sight has not improved, or who, apparently, do not wear correct lenses. Moreover, it is known that children's sight may frequently be progressively defective, and it is essential that periodical "testing" should be carried out. Too often it is imagined that one testing is enough.

General Physical Development.—This condition seems to be gradually improving. This year I only note twenty-six cases, as against thirty-nine last year. I feel sure that this, as mentioned before, is due, to a large extent, to the attention given to physical exercises, etc. Of the twenty-six cases fifteen were noted amongst the girls and eleven in the boys. Thirteen of these cases were associated with some other defect, nearly all having enlarged or unhealthy tonsils. I have definite notes of eleven cases reported under this heading who now show marked improvement, or have even returned to normal conditions.

Lungs.—Three cases have been noted with abnormal conditions in the lungs—one girl who has recently had pleurisy, and two boys with weak chests. They have been kept under observation, and been examined more than once. In none of the cases is there any sign of acute trouble or active tuberculosis. All cases have been found improved on subsequent examinations.

Heart.—Fourteen cases of organic heart trouble and fourteen functional heart disorders were found. This seems a very large number, especially of organic type. I trust some of these cases may prove not to be organic and recover with time. Some of them have a distinct rheumatic fever history, and others with very marked signs give no history to suggest a cause. This brings out what is medically well known, that this condition may arise very insidiously. It also shows the value of periodical medical examinations, as they would never have been found out otherwise. The functional cases will, I trust, all clear up with the necessary treatment. All cases are reported to their parents, and are kept under observation in school, and exercises, drill, etc., modified when necessary.

Goitre.—Only seven cases of enlarged thyroid were found. One was in a boy and the rest were in girls. Four were only slight. A few years ago this condition was present in almost epidemic numbers, and it is gratifying to find the number so reduced.

Skin.—I am glad to report that no contagious skin disease was found amongst the whole fourteen skin troubles noted.

Miscellaneous.—The following cases were noted under this heading:—

Anaemia.—Thirteen cases. Eleven girls; two boys.

Stammerers.—Two cases. One girl; one boy.

Recent Nervous Breakdown.—Two girls.

Nasal Catarrh and Obstruction.—Four boys.

Glands in the Neck.—Two girls.

Congenital Hip Disease.—One girl.

In addition to these it was noted that several pupils had had (a) appendix and other operations, (b) scarlet fever, (c) diphtheria, or (d) various accidents. Statistics on these points would, however, be very inaccurate and serve no purpose. I have, therefore, not thought it necessary to attempt to tabulate them.

(Signed)

G. BERTRAM MURIEL, B.A., M.B., B.Ch. Cantab.,
M.R.C.S. Eng., L.R.C.P. Lond.